Draft

Environmental Impact Statement

Navy Old Town Campus Revitalization

Naval Base Point Loma San Diego, California

May 2021

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DRAFT

ENVIRONMENTAL IMPACT STATEMENT

For

NAVY OLD TOWN CAMPUS REVITALIZATION

At

SAN DIEGO, CALIFORNIA

May 2021

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Abstract

Designation: Environmental Impact Statement
Title of Proposed Action: Navy Old Town Campus Revitalization
Project Location: Naval Base Point Loma Old Town Campus
Lead Agency for the EIS: Department of the Navy
Cooperating Agency: San Diego Association of Governments
Affected Region: San Diego, California
Action Proponent: Naval Information Warfare Systems Command
Point of Contact: Navy OTC Revitalization EIS Project Manager
Attention: Ron Bochenek
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San Diego, California 92132-0058

Date: May 2021

The United States Department of the Navy (Navy) prepared this Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality regulations and Navy regulations for implementing NEPA. The Proposed Action is the modernization of Naval Information Warfare Systems Command's (NAVWAR's) facilities on Naval Base Point Loma Old Town Campus (OTC), in San Diego, California, through demolition, construction, and renovation of buildings, utilities, and infrastructure. The purpose of the Proposed Action is to provide modern facilities to enhance NAVWAR's operational and sustainment effectiveness through redevelopment of OTC. Five action alternatives and a No Action Alternative are analyzed in this EIS. One action alternative involves Navy-funded redevelopment, including modernization of NAVWAR buildings; the four other action alternatives involve public-private redevelopment, including construction of new NAVWAR facilities, plus construction of additional mixed-use redevelopment on OTC with varying development densities. During the Navy's Request for Interest process, which sought to explore public-private redevelopment concepts for OTC that would include new facilities for NAVWAR, private developers and the San Diego Association of Governments (SANDAG) expressed interest in OTC as a potential location for a transit center. In response to this interest, two action alternatives (Alternatives 4 and 5) include a transit center on OTC. The inclusion of a transit center would be beneficial to efficient travel of NAVWAR employees and visitors to and from OTC. This EIS evaluates the potential environmental impacts of implementing each alternative to the following resource areas: Air Quality, Transportation, Visual Resources, Land Use, Socioeconomics, Cultural Resources, Hazardous Materials and Waste, Public Health and Safety, Environmental Justice and Protection of Children, Public Services, Infrastructure, Airspace, Noise, Geological Resources, Water Resources, and Biological Resources. Although this federal action is not subject to the requirements of the California Environmental Quality Act (CEQA), CEQA may be required if the public-private development involves a discretionary action by a California state or local public agency, or if property leaves federal ownership. Therefore, a CEQA impact analysis is included as an appendix to this EIS. The CEQA appendix addresses alternatives 4 and 5, the highest density alternatives which also include a transit center. Because the CEQA appendix considers the highest levels of potential impact, the analysis could also be used if alternative 2 or 3 is selected. The EIS is not a joint NEPA/CEQA document and future CEQA actions would be the responsibility of the appropriate state or local agency or private developer.

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Executive Summary

ES.1 Introduction and Background

The United States (U.S.) Department of the Navy (Navy) prepared this Environmental Impact Statement (EIS) to evaluate the potential environmental consequences of the proposed modernization of Naval Base Point Loma Old Town Campus (OTC), San Diego, California. OTC is home to the Naval Information Warfare Systems Command (NAVWAR).

NAVWAR's mission is to rapidly deliver information warfighting capability through use of research and development. NAVWAR supports the Navy's growing cyberspace capabilities and provides the hardware and software that support manned and unmanned systems at sea, land, in the air, and in space. The existing buildings and facilities used by NAVWAR on OTC are outdated, inefficient, and not conducive to sustaining NAVWAR's mission requirements.

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

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

The Proposed Action is the modernization of NAVWAR's facilities on OTC through demolition, construction, and renovation of buildings, utilities, and infrastructure. This could be accomplished using either Navy redevelopment alone or public-private developer collaboration.

The Navy, serving as lead agency, prepared this document in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; the Council on Environmental Quality (CEQ) Regulations implementing NEPA (40 Code of Federal Regulations [CFR] parts 1500-1508); Navy regulations for implementing NEPA (32 CFR part 775); and all applicable federal environmental laws and agency guidance (Appendix B).

The San Diego Association of Governments (SANDAG) is a cooperating agency for the development of the EIS pursuant to NEPA and associated regulations. As the San Diego regional planning agency, SANDAG possesses unique expertise and authority with respect to potential impacts associated with land use, viewsheds, transportation, and construction that could result from the proposed redevelopment of OTC. The Navy invited SANDAG to participate as a cooperating agency in the EIS.

SANDAG and the Navy signed an agreement on September 19, 2019 and a follow-on agreement on January 23, 2020 to define how collaboration between the agencies would occur. The agreements are included as Appendix P of this EIS.

ES.2 Project Location

The federally owned land on which the OTC facilities are located is adjacent to Pacific Highway in the City of San Diego and consists of two sites totaling 70.5 acres: OTC Site 1 (48.7 acres) and OTC Site 2 (21.8 acres). The two sites are separated by Pacific Highway and connected via a pedestrian overpass. The land comprising OTC is almost completely (95 percent) developed and covered with buildings and pavement (Navy, 2020a; California Regional Water Quality Control Board, 2014). Figure ES-1 shows the immediate vicinity of OTC.

OTC Site 1 is bordered by Pacific Highway to the west, Interstate 5 to the north and east, a railroad right-of-way to the east, and Barnett Avenue and Witherby Street to the south. Current facilities on OTC Site 1 include three former World War II (WWII)-era aircraft manufacturing warehouses (Buildings 1, 2, and 3) (approximately 310,000 square feet each) that are used as administrative offices, laboratory and warehouse spaces, and several smaller buildings (Buildings 4, 7, 8, 27, 28, and 34). Paved access roads run between the buildings. Paved vehicle parking and materials storage areas are located throughout the remainder of OTC Site 1.

OTC Site 2 is located west of OTC Site 1 and is bordered by Midway Drive to the west, Rosecrans Street to the north, Pacific Highway and Sports Arena Boulevard to the east, and Enterprise Street to the south. OTC Site 2 is dominated by operational supply Building 2555 (approximately 136,000 square feet). The remainder of OTC Site 2 consists of paved surface parking and a few small buildings, including Buildings 34 and 40.

OTC is located within the City of San Diego’s Midway-Pacific Highway Community Planning Area. The area is an urbanized neighborhood situated north of downtown San Diego, between the Old Town and Point Loma communities. The area has a commercial core containing numerous shopping centers, institutional facilities, multi-family residential developments, visitor-oriented uses, and older industrial areas. The area is characterized by wide streets, flat topography, and a mix of auto-oriented large and small commercial developments. The Pacific Highway corridor located between Interstate 5 on the east and Marine Corps Recruit Depot (MCRD) and San Diego International Airport on the west, contains commercial and industrial uses, multi-family residential developments, and airport-related commercial uses.

Pacific Highway borders the entire west and southwestern edge of OTC Site 1, and a variety of commercial and industrial properties are located west, across Pacific Highway. Downtown San Diego is located approximately 2 miles south, and the Point Loma and Liberty Station neighborhoods are located southwest of the project site. Interstate 5 is located directly north of OTC Site 1 and the Interstate 5/Interstate 8 interchange is located northwest of OTC Site 1.

OTC is located in a commercial and industrial area near downtown San Diego, between the Old Town and Point Loma communities, and adjacent to the Old Town Transit Center.

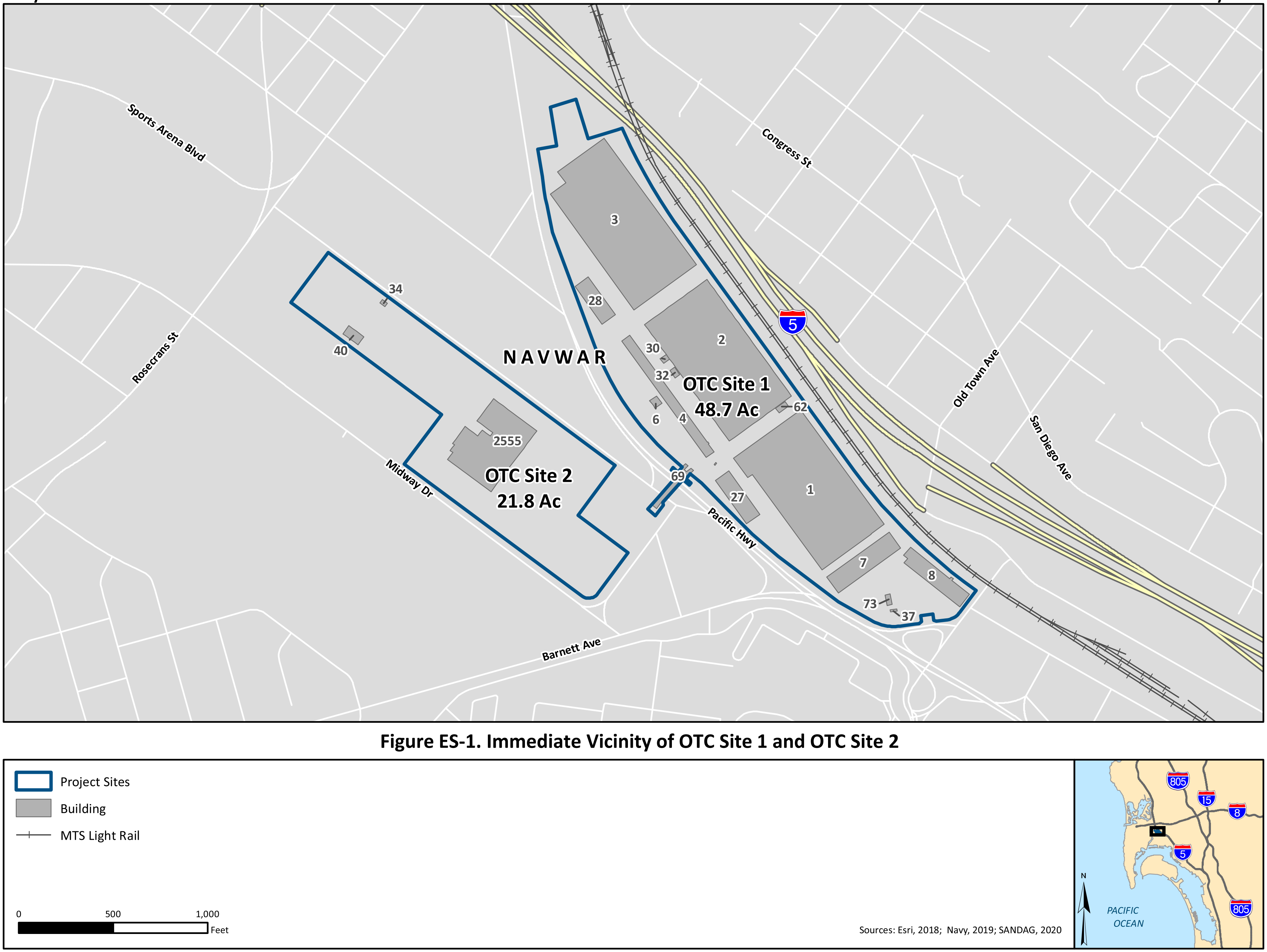

Figure ES-1. Immediate Vicinity of OTC Site 1 and OTC Site 2

ES.3 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide modern facilities to enhance NAVWAR's operational and sustainment effectiveness through redevelopment of OTC. The current facilities are beyond their useful life and do not comply with current seismic design requirements, applicable antiterrorism force protection standards, nor do they provide controlled access and independent utility systems for secure spaces.

The Proposed Action is needed to enable NAVWAR to meet its operational and mission sustainment requirements. Secure and modern facilities are necessary to meet information technology, artificial intelligence, and cyber-warfare operational requirements. Having such facilities are critical to meeting NAVWAR's national defense mission.

***Purpose**: to provide modern facilities to enhance NAVWAR's operational and sustainment effectiveness through redevelopment of OTC.*

***Need**: to enable NAVWAR to meet its operational and mission sustainment requirements.*

The OTC location is critical to achievement of the NAVWAR mission because it is a nexus to other regional military installations, defense contractors, research firms, and academic institutions in the area. NAVWAR's location near regional transportation corridors and mass transit also facilitates the efficient travel of NAVWAR employees and visitors to and from the facility.

Due to the size of the OTC property, and the opportunity to optimally design the modern NAVWAR facilities and functions to achieve greater operational efficiency, the Navy has determined that OTC could support redevelopment that not only modernizes NAVWAR's facilities, but also introduces new uses without negatively impacting NAVWAR's security or mission requirements. Therefore, the purpose of and need for the Proposed Action can be achieved through Navy redevelopment alone, or in collaboration with private developers to fund NAVWAR redevelopment on OTC through mixed-use redevelopment on other parts of the property.

ES.4 Proposed Action and Alternatives Considered

The Proposed Action is the modernization of NAVWAR's facilities on OTC through demolition, construction, and renovation of buildings, utilities and infrastructure.

ES.4.1 Alternatives Development

This section summarizes the major requirements and factors that influenced the development of the action alternatives evaluated in this EIS. The Navy's buildout analysis (Appendix C) used industry standards, best available data, input from public outreach efforts, and professional judgment to define a range of reasonable and feasible redevelopment options for OTC. The resulting alternatives should not be considered exact representations of eventual facility designs or redevelopment details but are meant to provide assumptions for building height limits and construction footprints, mixed-use density targets, infrastructure requirements, construction phasing, and other project characteristics to enable a reasonable analysis of the potential environmental impacts under each action alternative.

The Navy considered the following requirements and input while developing the OTC buildout analysis, and to help define the redevelopment assumptions and thresholds for each action alternative:

- NAVWAR requirements
- Responses to a Navy Request for Interest regarding public-private redevelopment at OTC
- SANDAG market analysis to evaluate public-private redevelopment potential on OTC
- City of San Diego development review process
- Federal Aviation Administration (FAA) review
- Public comments received during the scoping period

The Navy utilized NAVWAR requirements, responses to the Request for Interest, and the SANDAG market analysis to develop the basis for a range of redevelopment densities and uses at OTC for Alternatives 2, 3, 4, and 5.

ES.4.2 Alternatives Carried Forward for Analysis

Through the alternative development process, five action alternatives were identified that meet the purpose and need for the Proposed Action. One action alternative analyzes Navy redevelopment of NAVWAR facilities on OTC, and four action alternatives analyze public-private redevelopment with a reduced NAVWAR footprint and a range of new mixed-uses on the remainder of OTC. Two of the action alternatives include consolidation of a transit center on OTC. In addition to the No Action Alternative, the following five action alternatives are analyzed in this EIS:

- Alternative 1: NAVWAR-Only Redevelopment
- Alternative 2: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use
- Alternative 3: Public-Private Redevelopment–NAVWAR and Lower Density Mixed Use
- Alternative 4: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use with a Transit Center (Preferred Alternative)
- Alternative 5: Public-Private Redevelopment–NAVWAR and Lower Density Mixed Use with a Transit Center

The total NAVWAR facility requirement on OTC for Alternative 1 is 3,307,008 square feet. Alternative 1 would utilize existing buildings and provide upgrades to current codes and security requirements. Alternative 1 redevelopment involves only NAVWAR uses and would not introduce public-private development. Alternative 1 retains components such as warehouse and open storage at OTC. Alternative 1 is proposed to be implemented over a 5-year period. The exact start date of this redevelopment would depend on the availability of Navy funds.

Alternatives 2, 3, 4, and 5 include redevelopment of OTC with a NAVWAR footprint that does not include warehouse and open storage but does add new public-private redevelopment uses and densities. For Alternatives 2 through 5, the Navy's warehouse and open storage functions would be relocated to existing Navy facilities within the San Diego region. The total NAVWAR facility requirements on OTC for Alternatives 2 through 5 is 1,694,268 square feet. For Alternatives 2 through 5, the Navy estimated a mix of building types and projected building locations and heights to satisfy each development density. Redevelopment of the OTC property through public-private development is proposed to be implemented over a 30-year period through a phased development approach. The intent would be to redevelop the property in stages with flexibility to accommodate market conditions. In all cases, the NAVWAR requirements would be constructed first, over a period of 5 years. Phasing over the remaining 25 years would be based on a variety of development and real estate factors.

The Navy's Preferred Alternative is Alternative 4 as it meets the purpose and need for modernized facilities for NAVWAR, includes efficient access to mass transit for NAVWAR employees and visitors, and provides the most flexibility for future design of development on OTC.

The Navy's Preferred Alternative is Alternative 4 as it meets the purpose and need for modernized facilities for NAVWAR, includes efficient access to mass transit for NAVWAR employees and visitors, and provides the most flexibility for future design of development on OTC.

No Action Alternative

Under the No Action Alternative, modernization of NAVWAR facilities requirements would not occur and NAVWAR would continue to operate in existing facilities. No change from existing conditions would occur and the Navy would continue to maintain the existing facilities. The No Action Alternative would not meet the purpose of the Proposed Action as it would not provide modern facilities and would not enhance NAVWAR's operational and sustainment effectiveness. It also would not address the need to enable NAVWAR to meet its operational and mission sustainment requirements. Despite this, and as required by NEPA, the No Action Alternative is carried forward for analysis in this EIS.

Alternative 1: NAVWAR-Only Redevelopment

Alternative 1 would include Navy-only redevelopment of OTC. Facilities would be redeveloped by phasing construction projects to minimize impacts on the NAVWAR mission. This alternative does not involve mixed-use development or a transit center on OTC. NAVWAR operations would be consolidated into two of the existing 310,000 square-foot buildings (Buildings 2 and 3) on OTC Site 1. The existing warehouse and parking area on OTC Site 2 would not be modified under this alternative. No additional demolition or construction would occur on OTC Site 2.

Utilities onsite would be repaired or upgraded to meet NAVWAR's current and future requirements. The renovations would occur in eight phases (four phases to complete each building) and would take approximately 5 years to complete. Other obsolete facilities and utilities on OTC Site 1 would be demolished once the renovations to Buildings 2 and 3 were completed and NAVWAR operations relocated to the renovated buildings. Security and antiterrorism force protection upgrades would be included under this alternative, including upgrades to the entry control point and circulation improvements. Building 1 would be demolished and a parking lot with 1,500 spaces would be constructed in its place. Because specific site layouts and building design are not known at this time, a general representation of renovation is shown in Figure ES-2.

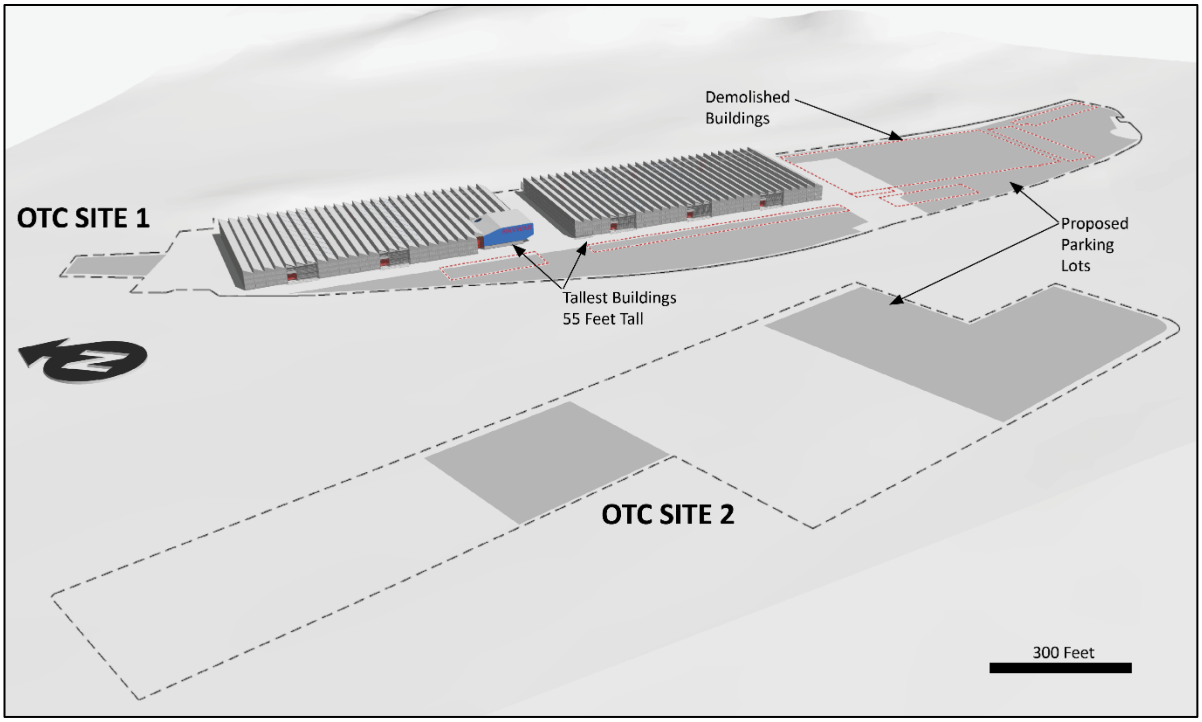

Figure ES-2 Estimated Buildout for Alternative 1 on OTC Site 1

Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Alternative 2 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage with a combination of mixed use residential, office, hotel, and retail space. Alternative 2 would include demolition and construction of utilities, facilities, and infrastructure through a public-private development agreement.

Under Alternative 2, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 11,899,700 square feet of new private mixed-use development for a total of 13,593,968 square feet of development. Public-private development would include 6,600 residential units, 1,000,000 square feet of office space, 2 hotels, and 180,000 square feet of retail. Retail could include restaurants and other retail shopping uses.

Alternative 2 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure ES-3. In general, Alternative 2 would include construction of approximately 91 buildings including 6 standalone parking structures. The tallest buildings under Alternative 2 would be approximately 240 feet.

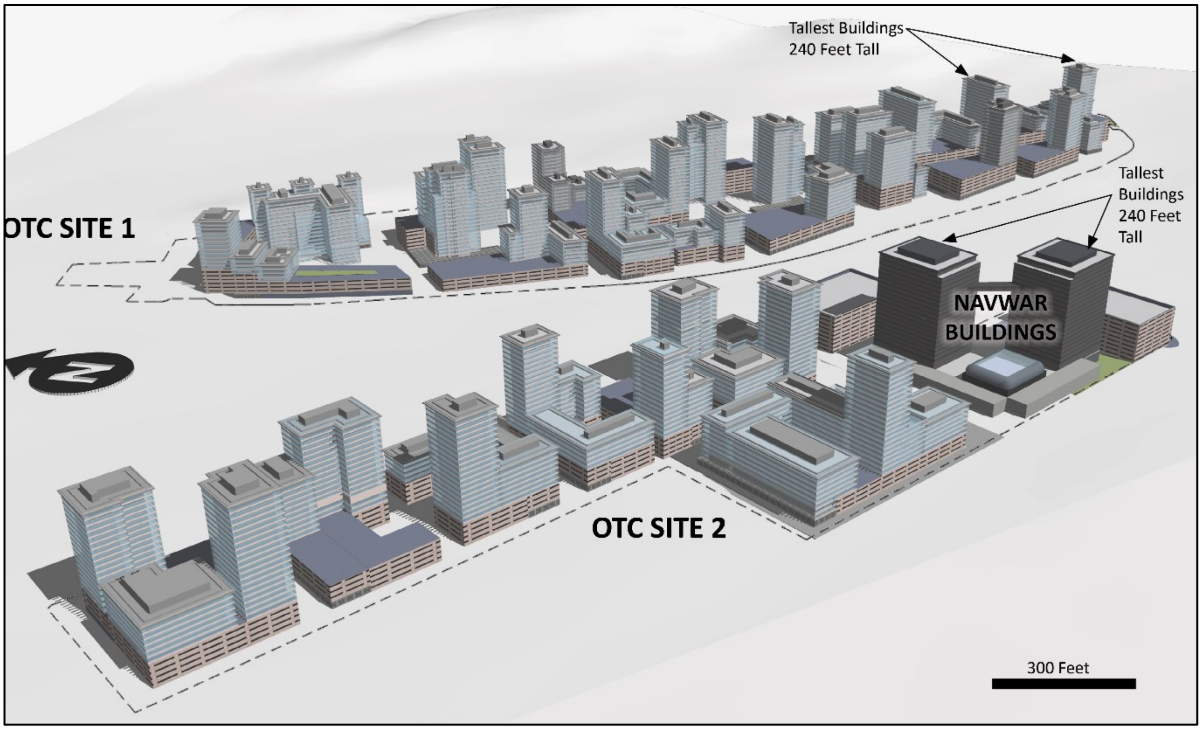

Figure ES-3 Representative Development for Alternative 2

- OTC Site 1. OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office, hotel, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.
- OTC Site 2. NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access, and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, hotel, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

Alternative 2 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 2 represents a higher intensity of new public-private development on OTC Site 1 and OTC Site 2, without the development of a transit center.

Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Alternative 3 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage and with a combination of a lower density of mixed use residential, office, hotel, and retail space. Alternative 3 would include demolition and construction of utilities, facilities, and infrastructure via a public-private development agreement.

Under Alternative 3, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 7,905,900 square feet of new private mixed-use development for a total of 9,600,168 square feet of development. Public-private development would include 4,400 residential units, 650,000 square feet of office space, 1 hotel, and 130,000 square feet of retail. Retail could include restaurants and other retail shopping uses.

Alternative 3 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure ES-4. In general, Alternative 3 would include construction of approximately 106 buildings including 11 standalone parking structures. The tallest buildings under Alternative 2 would be approximately 240 feet.

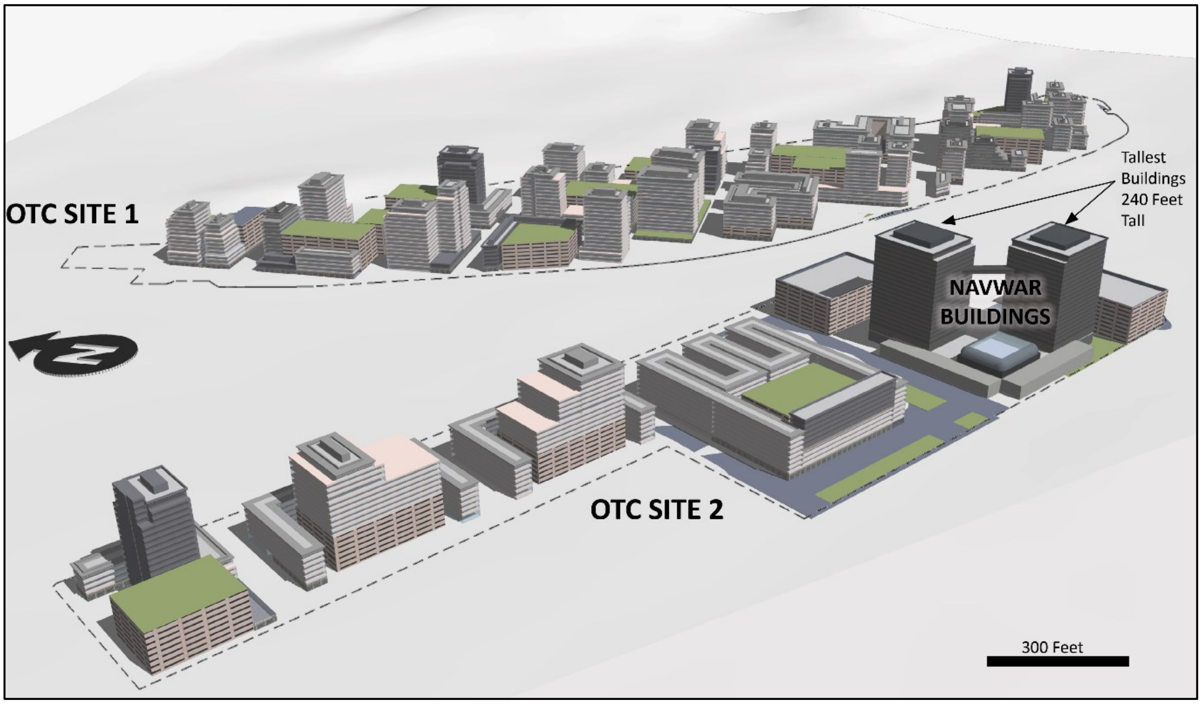

Figure ES-4 Representative Development for Alternative 3

- **OTC Site 1.** OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office, hotel, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.
- **OTC Site 2.** NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access, and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

Alternative 3 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 3 represents a lower intensity of new public-private development on OTC Site 1 and OTC Site 2 that does not include the development of a transit center.

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

Alternative 4 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage and with a higher density of mixed use residential, office, hotel, and retail space and a transit center. Alternative 4 would include demolition and construction of utilities, facilities, and infrastructure via a public-private development agreement.

Under Alternative 4, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 17,895,000 square feet of new private mixed-use development for a total of 19,589,268 square feet of development. Public-private development would include 10,000 residential units, 1,350,000 square feet of office space, 2 hotels, and 250,000 square feet of retail. Retail could include restaurants and other retail shopping uses. In addition, this alternative includes the construction of an onsite transit facility on OTC Site 1.

Alternative 4 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure ES-5. In general, Alternative 4 would include construction of approximately 109 buildings including 2 standalone parking structures. The tallest buildings under Alternative 4 would be approximately 350 feet.

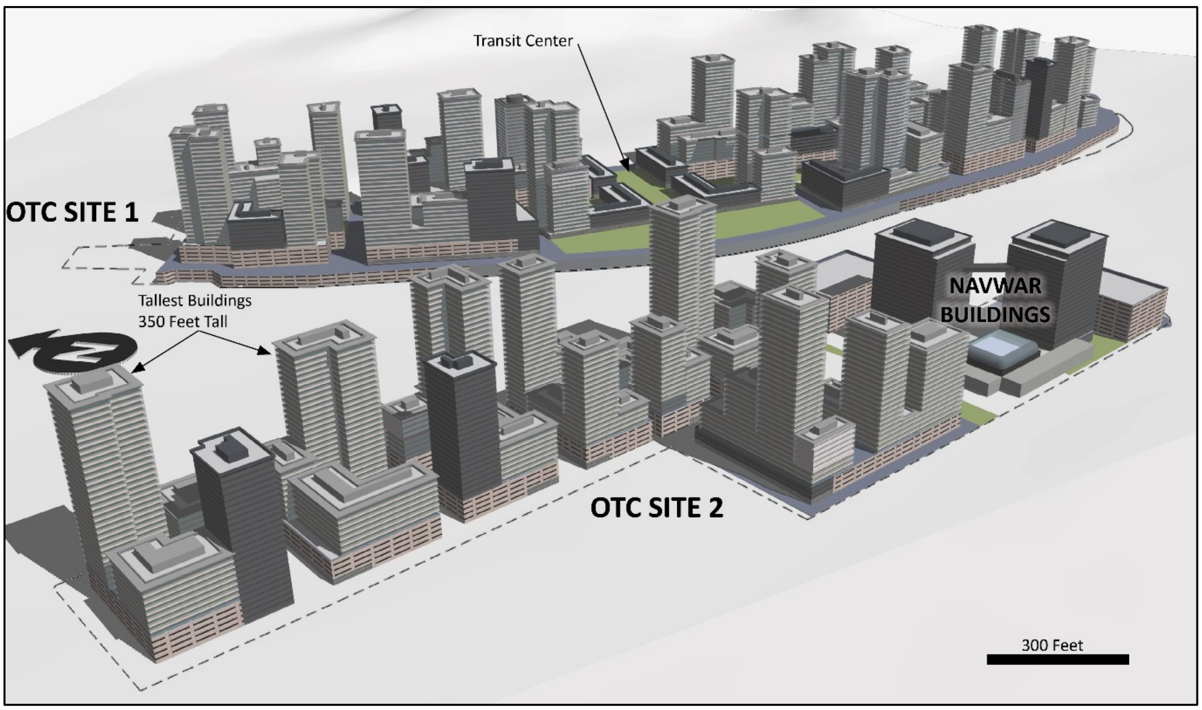

Figure ES-5 Representative Development for Alternative 4

- **OTC Site 1.** OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office, hotel, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings. OTC Site 1 would also include a transit center.

- **OTC Site 2.** NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building, and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access, and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, hotel, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

Alternative 4 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 4 represents a higher intensity of new public-private development on OTC Site 1 and OTC Site 2, including development of a transit center.

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

Alternative 5 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage and with a combination of a lower density of mixed use residential, office, hotel, and retail space, and a transit center. Alternative 5 would include demolition and construction of utilities, facilities, and infrastructure through a public-private development agreement.

Under Alternative 5, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 14,117,750 square feet of new mixed-use development for a total of 15,812,018 square feet of development. Public-private development would include 8,000 residential units, 850,000 square feet of office space, 2 hotels, and 200,000 square feet of retail. Retail could include restaurants and other retail shopping uses. In addition, this alternative includes the construction of an onsite transit facility on OTC Site 1.

Alternative 5 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure ES-6. In general, Alternative 5 would include construction of approximately 107 buildings including 2 standalone parking structures. The tallest buildings under Alternative 2 would be approximately 350 feet.

- **OTC Site 1.** OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office, hotel, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings. OTC Site 1 would also include the transit center.
- **OTC Site 2.** NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building, and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access, and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, hotel, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

Alternative 5 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 5 represents a lower intensity of new public-private development on OTC Site 1 and OTC Site 2, including development of a transit center.

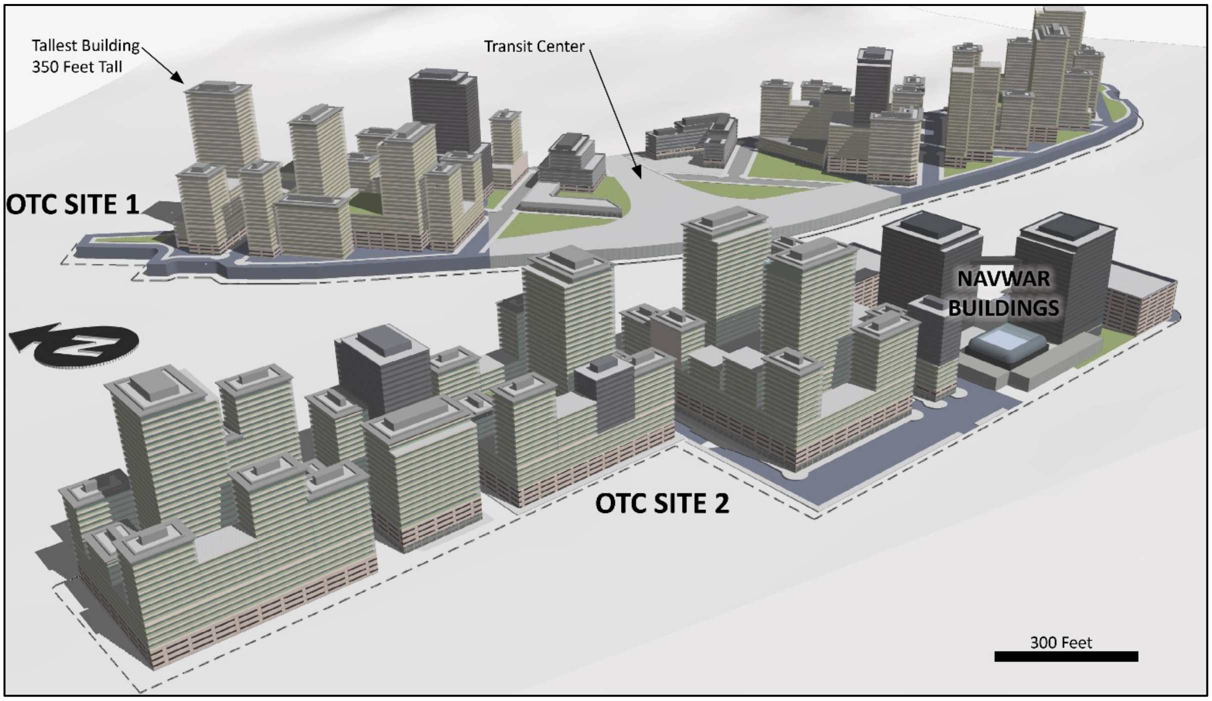

Figure ES-6 Representative Development for Alternative 5

ES.5 Summary of Environmental Resources Evaluated in the Environmental Impact Statement

This EIS includes an analysis of potential environmental impacts associated with five Proposed Action Alternatives and the No Action Alternative. The environmental resource areas analyzed in this EIS include:

- Air Quality
- Transportation
- Visual Resources
- Land Use
- Socioeconomics
- Cultural Resources
- Hazardous Materials and Wastes
- Public Health and Safety
- Environmental Justice and Protection of Children
- Public Services
- Infrastructure
- Airspace
- Noise
- Geological Resources
- Water Resources
- Biological Resources

The study area for each resource analyzed may differ due to how the Proposed Action interacts with or impacts the resource. For instance, the study area for geological resources includes the construction footprint, whereas the noise study area would expand to include off-site areas that may be impacted by construction noise.

If a public-private mixed-use development alternative is ultimately selected for implementation, additional activities may need to be undertaken outside of the OTC property in the future, such as roadway improvements. Some of these roadway improvements or other off-site actions may be identified as potential mitigation measures. Specific improvements would not be known until mixed-use development details are developed. Additional NEPA and/or California Environmental Quality Act (CEQA) analysis may be required once site-specific development plans are known. The action proponent(s) for the off-site improvements may not be the Navy and could be another state or federal entity.

ES.6 Summary of Potential Environmental Consequences of the Action Alternatives and Major Mitigation Actions

Table ES-1 provides a summary of the potential impacts to the resources associated with each of the five Proposed Action Alternatives and the No Action Alternative. For a detailed description and analysis, refer to Chapter 3, *Affected Environment and Environmental Consequences* and Chapter 4, *Cumulative Impact Analysis*. A summary of management practices that would apply to any action alternative is available in Section 2.5, *Best Management Practices Included in the Proposed Action.* Additional environmental impact avoidance, minimization, and mitigation measures are discussed separately in Chapter 3.

ES.7 Public Involvement

CEQ regulations direct agencies to involve the public in preparing and implementing their NEPA procedures. The NEPA environmental review process is intended to help public officials make decisions based on an understanding of the environmental consequences and take actions that protect, restore, and enhance the environment (40 CFR 1500.1). In addition to NEPA public involvement, the Navy is also conducting outreach to educate, inform, and enable public and other agency participation in the Navy planning efforts.

The Navy published a Notice of Intent to prepare an EIS in the Federal Register on January 24, 2020 (85 Federal Register 4309). The Notice of Intent announced the public scoping period and the dates, times, and locations of public scoping meetings. Notices announcing the intent to prepare an EIS, and the public scoping meeting details were published in five newspapers: The San Diego Union Tribune, Peninsula Beacon, Uptown News, Presidio Sentinel, and El Latino (a Spanish-language newspaper), and on the project website: www.NAVWAR-revitalization.com.

Public input is an essential part of the EIS process. The Navy reviewed all scoping comments and used them in the preparation of this EIS.

Public input is an essential part of the EIS process. The Navy solicited public and agency comments during a scoping period from January 24, 2020, through February 24, 2020. The Navy held scoping meetings on February 13, 2020 and February 19, 2020 at the Liberty Station Conference Center. During the public scoping period, the Navy received 125 comments. Respondents submitted their comments through a project website, in writing at the public scoping meetings, by postal mail, verbally at the public scoping meetings via a court reporter, and via email. The Navy reviewed all scoping comments and used them in the preparation of this EIS. A summary of the public scoping process and a summary of public comments is included in Appendix O.

A notice of availability (NOA) pursuant to NEPA and Section 106 of the National Historic Preservation Act for the Draft EIS was published in the Federal Register on May 14, 2021 to initiate a 60-day public and agency review and comment period. The public comment period runs from May 14, 2021 to July 13, 2021. To ensure the widest possible distribution, the Navy distributed the Draft EIS to government agencies, American Indian tribes, local libraries, and members of the public who requested copies. The NOA was published in the same five newspapers as the Notice of Intent. The Draft EIS was also posted on the project website: www.NAVWAR-revitalization.com. Comments received during the Draft EIS public comment period will be considered during preparation of the Final EIS.

In addition to the public involvement required by NEPA, the Navy has and will continue to conduct public outreach to educate, inform, and enable public participation in the Navy's planning efforts. This includes updating the project's public website regularly with key project information, establishing a project information hotline allowing the public to ask questions about the project by phone, publishing a summary of public input received during scoping, holding public meetings and providing briefings to community groups, and regularly interacting with the media to make project information readily available to the public.

The Navy is conducting public outreach to educate, inform, and enable public participation. The Navy is also having regular communication with agency stakeholders during preparation of this EIS.

The Navy has had regular communication with agency stakeholders during preparation of this Draft EIS. The Navy is also consulting with the State Historic Preservation Officer and Tribal Historic Preservation Officers under Section 106 of the National Historic Preservation Act for potential impact to properties eligible for listing on the National Register of Historic Places.

1 **Table ES-1 Summary of Potential Impacts to Resource Areas**

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
Air Quality	**No Impact.** Under the No Action Alternative, Proposed Action would not occur and there would be no change to operational activities at the OTC. Therefore, no impacts to air quality would occur from implementation of the No Action Alternative.	**Less Than Significant Impact.** Annual conformity-related emissions from construction or operation of Alternative 1 would not exceed the conformity *de minimis* thresholds of 25 tons per year of VOCs or NO_x and therefore would not be subject to the requirements of the General Conformity Rule. Under Alternative 1, construction of the Navy facilities would occur from 2021 through 2025. The maximum annual construction emissions would be below the applicable annual criteria pollutant significance thresholds and would therefore result in less than significant impacts to criteria pollutants. Post-construction, the annual net changes in emissions from operation of Alternative 1 (Alternative 1 minus No Action Alternative) would be minimal and below the significance thresholds for all pollutants. Project-generated traffic would not result in the creation of any local CO impacts. HAP emissions from construction or operation would remain well below the significance thresholds of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs and thus would result in less than significant impacts. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Section 3.1.5.9 provides management practices intended to reduce air emissions from construction and operation for each action alternative. Therefore, Alternative 1 would result in less than significant impacts to air quality.	**Less Than Significant Impact.** Under Alternative 2, construction of the Navy facilities would occur from 2021 through 2025 and construction of private development would occur from 2026 through 2049. Annual emissions from Alternative 2 would exceed the VOC and NO_x annual significance thresholds of 25 tons per year during combined construction and operation beginning in 2040 and during operations, after construction is completed, beginning in 2050. Further analysis determined that these emissions would not contribute to an exceedance of a national ambient air quality standard. Therefore, Alternative 2 would result in less than significant impacts to criteria pollutants. Alternative 2 would also result in less than significant local CO impacts and less than significant health impacts from HAP emissions. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Therefore, Alternative 2 would result in less than significant impacts to air quality.	**Less Than Significant Impact.** Under Alternative 3, construction and operations emissions would be similar but less than those described under Alternative 2. The maximum annual construction and operation emissions would be below the applicable annual criteria pollutant significance thresholds and would therefore result in less than significant impacts to criteria pollutants. Alternative 3 would also result in less than significant local CO impacts and less than significant health impacts from HAP emissions. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Therefore, Alternative 3 would result in less than significant impacts to air quality.	**Less Than Significant Impact.** Annual conformity-related emissions from construction and operation of Alternative 4 would not exceed the conformity *de minimis* thresholds of 25 tons per year of VOCs or NO_x and therefore would not be subject to the requirements of the General Conformity Rule. A sizeable portion of air emissions from the operation of private development would be beyond the reasonable control of the Navy. Under Alternative 4, construction and operations emissions would be similar to those described under Alternative 2, but greater. Annual emissions from Alternative 4 would exceed the VOC and NO_x annual significance thresholds of 25 tons per year during combined construction and operation beginning in 2035 and during operations, after construction is completed, beginning in 2050. Further analysis determined that these emissions would not contribute to an exceedance of a national ambient air quality standard. Therefore, Alternative 4 would result in less than significant impacts to criteria pollutants. Alternative 4 would also result in less than significant local CO impacts and less than significant health impacts from HAP emissions. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Therefore, Alternative 4 would result in less than significant impacts to air quality.	**Less Than Significant Impact.** Under Alternative 5, construction and operations periods would be similar to those described under Alternative 4, but slightly less. Annual emissions from Alternative 5 would exceed the VOC and NO_x annual significance thresholds of 25 tons per year during combined construction and operation beginning in 2038 and during operations, after construction is completed, beginning in 2050. Further analysis determined that these emissions would not contribute to an exceedance of a national ambient air quality standard. Therefore, Alternative 5 would result in less than significant impacts to criteria pollutants. Alternative 5 would also result in less than significant local CO impacts and less than significant health impacts from HAP emissions. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Therefore, Alternative 5 would result in less than significant impacts to air quality.
Transportation	**Less Than Significant Impact.** The transportation network would likely experience greater baseline demand from 2020 to 2050 with the No Action Alternative. However, under No Action, NAVWAR operations would not add trips to the ROI based on development. Therefore, the No Action Alternative would not result in significant impacts to transportation above that experienced through ambient growth and non-Navy developments.	**Significant Impact.** Alternative 1 would result in significant impacts to eight intersections and one street segment over the baseline conditions. The Navy's analysis identifies potential mitigation measures for the nine impacted locations, of which five would be fully mitigated and four impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 2 would result in 61 significant impacts. The Navy's analysis identifies potential mitigation measures for the 61 impacted locations, of which 32 would be fully mitigated and 29 impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 3 would result in 59 significant impacts. The Navy's analysis identifies potential mitigation measures for the 59 impacted locations, of which 33 would be fully mitigated and 26 impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 4 would result 62 significant impacts. The Navy's analysis identifies potential mitigation measures for the 62 impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 5 would result in the same significant impacts as Alternative 4. The Navy's analysis identifies potential mitigation measures for the 62 impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
Visual Resources	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to visual resources. Therefore, no impacts would occur.	**Less Than Significant Impact.** Alternative 1 would result in the demolition of several existing buildings and building heights would remain similar to existing conditions. Most viewers would not be able to see the changes resulting from Alternative 1. Construction would occur over a 5-year period and visual impacts during construction would be temporary. Modernization of the NAVWAR facilities would result in less than significant to slightly beneficial impacts to visual quality community character, and no impact for other impact criteria such as light and glare, view quality or blockage. Therefore, implementation of Alternative 1 would result in less than significant impacts to visual resources.	**Significant Impact.** Alternative 2 would result in the demolition of all existing buildings on OTC and the construction of new facilities for NAVWAR along with private mixed-use development with buildings up to 240 feet tall. While the site layout and building design are not currently known, simulations were used to consider a representative development of a certain mass and scale associated with Alternative 2. Demolition and construction would occur over a 30-development development window, and construction equipment and materials will be visible and create a temporary impact to visual quality. Long-term impacts range from slight beneficial impacts to visual quality and character, to less than significant impacts to scenic highways, and a significant impact to view quality. The new construction could have an impact resulting from light, glare, shade, and shadow; however, these impacts would be less than significant and could be further reduced by adherence to the management practices described in Section 3.3.4.8. Therefore, implementation of Alternative 2 would result in a significant impact to visual resources.	**Less Than Significant Impact.** Alternative 3 would result in similar impacts to visual resources as described under Alternative 2 under construction and operations. However, the significant impact to view quality could be reduced to less than significant through adherence to the management practices described in Section 3.3.4.8. Therefore, implementation of Alternative 3 would result in a less than significant impacts to visual resources.	**Significant Impact.** Alternative 4 would result in similar construction impacts as described for Alternative 2. Operational impacts would be similar to Alternative 2 but greater, as the private mixed-use development would include buildings up to 350 feet tall and the mass and scale of buildings would be greater. While the site layout and building design are not currently known, simulations were used to consider a representative development of a certain mass and scale associated with Alternative 4. Similar to Alternative 2, the new construction could have an impact resulting from light, glare, shade, and shadow; however, these impacts would be less than significant and could be further reduced by adherence to the management practices described in Section 3.3.4.8. However, long-term impacts range from slight beneficial impacts to visual quality and character, to significant impacts to scenic highways, view quality. While the management practices may reduce or minimize some of these significant impacts, impacts to view quality would remain significant. Therefore, implementation of Alternative 4 would result in a significant impact to visual resources.	**Significant Impact.** Alternative 5 would result in similar impacts to visual resources as described under Alternative 4 under construction and operations, as the buildings would be up to 350 feet tall under Alternative 5 but the density would be slightly reduced. Similar to Alternative 4, the new construction could have an impact resulting from light, glare, shade, and shadow; however, these impacts would be less than significant and could be further reduced by adherence to the management practices described in Section 3.3.4.8. However, long-term impacts range from slight beneficial impacts to visual quality and character, to significant impacts to scenic highways, view quality. While the management practices may reduce or minimize some of these significant impacts, impacts to view quality would remain significant. Therefore, implementation of Alternative 5 would result in a significant impact to visual resources.
Land Use	**No Impact.** Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities. There would be no change to existing land use and thus no impacts to adjacent existing or planned land use would occur.	**No Impact.** Under Alternative 1, no planned changes to existing land use or NAVWAR functions would occur. Alternative 1 is consistent with applicable military, regional, and local plans. It does not change the type or scale of existing land uses at OTC; it only reorganizes the land uses for improved efficiency. Therefore, Alternative 1 would result in no impacts to adjacent existing or planned land use.	**Significant Impact.** Under Alternative 2, new facilities would be constructed for NAVWAR at OTC and the remainder of the site would be used for private development of residential, office, hotel, retail, site circulation, parks, and open space uses. Alternative 2 is consistent with the military and regional plans, and with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan. However, the increased density under Alternative 2 contributes to significant additional proposed growth in dwelling units, population, jobs, and non-residential uses over the targets contained in the community plan. The inconsistency with the community plan land use densities would result in a significant impact.	**Significant Impact.** Alternative 3 would result in similar impacts to those described under Alternative 2. While Alternative 3 includes less development than Alternative 2, the inconsistency with the community plan land use densities would still result in a significant impact.	**Significant Impact.** Under Alternative 4, new facilities would be constructed for NAVWAR at OTC, a transit center would also be consolidated on OTC, and the remainder of the site would be used for private development of residential, office, hotel, retail, site circulation, parks, and open space uses. Alternative 4 would result in similar impacts to those described under Alternative 2. Alternative 4 is consistent with the mix of land uses, including the consolidation of the transit center on OTC, and transit-oriented development goals in the Midway-Pacific Highway Community Plan. Alternative 4 includes more development than Alternative 2, and the inconsistency with the community plan land use densities would result in a significant impact.	**Significant Impact.** Alternative 3 would result in similar impacts to those described under Alternative 2. While Alternative 3 includes less development than Alternative 2, the inconsistency with the community plan land use densities would still result in a significant impact.

Resource Area	No Action Alternative	Alternative 1: NAVWAR-Only Redevelopment	Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use	Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use	Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center	Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center
Socioeconomics	**No Impact.** Under the No Action Alternative, the Proposed Action at OTC would not occur and there would be no impacts to socioeconomic resources with the implementation of the No Action Alternative.	**Less Than Significant Impact.** Alternative 1 would be beneficial in terms of employment, income, and economic activity during the 5-year construction phase. During operations, staffing at NAVWAR would be similar to existing conditions, and no additional permanent population would be added to OTC. Therefore, there would be less than significant impacts under Alternative 1.	**Less Than Significant Impact.** Impacts under Alternative 2 would be beneficial in terms of employment, income, and economic activity, including GCP and state and local government revenue. Population would increase under Alternative 2 as additional housing supply would, over time, attract new residents from outside San Diego County. Impacts of the population increase are considered to be neither adverse nor beneficial; the additional population would increase demands on public services while concurrently adding to government revenue and overall economic activity that fund such services. Similarly, impacts on housing under Alternative 2 would not be beneficial but not significant; increased housing supply would not tend to increase prices or reduce affordability and would more likely tend to improve affordability relative to a condition with a more constrained housing supply. Therefore, there would be less than significant impacts under Alternative 2.	**Less Than Significant Impact.** Impacts under Alternative 3 would be similar to Alternative 2 though slightly reduced, as Alternative 3 includes less density for private mixed uses. Therefore, there would be less than significant impacts under Alternative 3.	**Less Than Significant Impact.** Impacts under Alternative 4 would be similar, though greater than Alternative 2 in terms of s of employment, income, and economic activity, due to the higher density of private mixed-uses, including the consolidation of a transit center on OTC. Impacts from population increase and housing supply would be similar to Alternative 2, neither adverse nor beneficial. Therefore, there would be less than significant impacts under Alternative 4.	**Less Than Significant Impact.** Impacts under Alternative 5 would be similar to Alternative 4 though slightly reduced, as Alternative 5 includes less density for private mixed uses including the consolidation of a transit center on OTC. Therefore, there would be less than significant impacts under Alternative 5.
Cultural Resources	**No Impact.** Under the No Action Alternative, the Proposed Action at OTC would not occur and there would be no impacts to cultural resources with the implementation of the No Action Alternative.	**Less Than Significant Impact.** Alternative 1 would result in the modernization of the facilities on OTC, which would include partial demolition of Consolidated Aircraft Plant 2 Historic District, which would result in the loss of NRHP eligibility. There are no identified archaeological sites on OTC and a low potential for buried unrecorded archaeological resources; however, an impact determination is pending completion of consultation. Consultation with the Kumeyaay did not indicate the presence of TCPs or sacred sites; however, the Native American Heritage Commission indicated the presence of Native American cultural resources in the vicinity of the Proposed Action area. The Navy will develop measures to, minimize, or mitigate adverse effects on historic properties in consultation with the SHPO and other interested parties following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 1 may result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 2 would result in the demolition of Consolidated Aircraft Plant 2 Historic District, which would result in the loss of NRHP eligibility, and reconstruction of modernized NAVWAR facilities and mixed-use public-private development on OTC. The new construction would introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of OTC and extensively alter their setting. Potential impacts to archaeological resources and TCPs or sacred sites would be the same as under Alternative 1. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO and other interested parties following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 2 may result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 3 would result similar impacts to cultural and historic resources as described for Alternative 2. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO and other interested parties following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 3 may result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 4 would result similar impacts to cultural and historic resources as described for Alternative 2. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO and other interested parties following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 4 may result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 5 would result similar impacts to cultural and historic resources as described for Alternative 2. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO and other interested parties following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 5 may result in less than significant impacts under NEPA.
Hazardous Materials and Wastes	**Less Than Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change in the storage or use of hazardous materials	**Less Than Significant Impact.** Under Alternative 1, project construction and operations conducted in accordance with the Spill Prevention, Control, and Countermeasure Plan would minimize risks associated with	**Less Than Significant Impact.** The types of impacts related to hazardous materials and wastes, special hazards, and contaminated sites under Alternative 2 would be similar to those described for Alternative 1.	**Less Than Significant Impact.** The types of impacts related to hazardous materials and wastes, special hazards, and IR sites under Alternative 3 would be similar to	**Less Than Significant Impact.** Impacts related to hazardous materials, hazardous wastes, and special wastes under Alternative 4 would be similar to those described for Alternative 2, with the	**Less Than Significant Impact.** The types of impacts related to hazardous materials and wastes, special hazards, and IR sites under Alternative 5 would be similar to those described for Alternative 4. Therefore,

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	or the generation of hazardous or special wastes. The use, storage, and disposal of hazardous materials, and generation and disposal of hazardous wastes, associated with ongoing and future facility maintenance activities at OTC would continue to be managed in accordance with existing Navy plans and applicable state and federal regulations. Ongoing remediation and monitoring activities related to the management of active IR sites would continue. As such, implementation of the No Action Alternative would not exacerbate existing risks associated with potential contaminant releases to the environment or to human health from contaminant exposures. Therefore, impacts from implementation of the No Action Alternative would be less than significant.	potential spills or releases of, and potential exposures of humans to, hazardous materials. Hazardous wastes generated during the construction and operations phases of Alternative 1 and managed in accordance with the Waste Management Plan. With proper protocols and in accordance with applicable regulations, handling and disposal of special wastes would not result in contaminant releases or exposures of humans to harmful substances. Continued adherence to established processes and procedures for managing IR sites would minimize impacts to human health and safety. The Navy would accomplish all development planning for Alternative 1 in coordination with future developers, regulatory agencies, and with the public (through the established Restoration Advisory Board process). Therefore, Alternative 1 would result in less than significant impacts to hazardous materials, hazardous wastes, special hazards, and human health and safety.	However, under Alternative 2, all existing OTC buildings would be demolished, and new construction would occur on both OTC Site 1 and OTC Site 2. This would potentially result in comparatively larger volumes of hazardous wastes and special hazards, along with a greater potential for encountering contaminated soils and groundwater during construction. As with Alternative 1, IR sites would continue to be managed under established processes and procedures and the Navy would accomplish all development planning for Alternative 2 in coordination with future developers, regulatory agencies, and with the public (through the established Restoration Advisory Board process). Therefore, impacts from the implementation of Alternative 2 would be less than significant related to hazardous materials and wastes.	those described for Alternative 2. Therefore, impacts from the implementation of Alternative 3 would be less than significant related to hazardous materials and wastes.	exception that the addition of a transit center would potentially add new hazardous materials and hazardous waste streams to OTC. As with Alternative 2, under Alternative 4 hazardous materials, hazardous wastes, and special wastes would be handled, stored, and disposed of in accordance with applicable plans and regulations designed to minimize environmental risks from accidental releases and risks of exposures to humans. IR sites would be managed in the same manner as described under Alternative 1. Therefore, impacts from the implementation of Alternative 4 would be less than significant related to hazardous materials and wastes.	impacts from the implementation of Alternative 5 would be less than significant related to hazardous materials and wastes.
Public Health and Safety	**Less Than Significant Impact.** **No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change from existing conditions. Therefore, impacts from implementation of the No Action Alternative would be less than significant.	**Less Than Significant Impact.** Under Alternative 1, impacts to public health and safety resources associated with construction, repair, renovation, and/or demolition would include hazards that are typical of most construction sites and would be addressed in a construction site safety plan, and through implementation of standard Occupational Safety and Health Administration and local safety construction guidelines. Outside of the construction site, the ROI is completely developed and occurs in a heavily trafficked, noisy, high-density urban setting that has experienced and will continue to experience other community and property construction projects. Operations under Alternative 1 would be similar to current operations at OTC but would occur in a modern facility that would have positive impacts on health, safety, and security. Therefore, Alternative 1 would result in less than significant impacts to public health and safety.	**Potentially Significant Impact.** Under Alternative 2, impacts during construction would generally be the same as described under Alternative 1, with the exception of a potentially significant impact from construction noise, particularly to locations within 200 feet of OTC. Although noise impacts from construction are generally considered to be temporary, the multi-year duration of construction under Alternative 2 would not be considered temporary. As a result of the extended construction timeframe, implementation of Alternative 2 would result in significant impacts to the noise aspect of public health and safety.	**Potentially Significant Impact.** Impacts under Alternative 3 would be the same as described under Alternative 2, primarily related to construction noise for during the multi-year construction period. As a result of the extended construction timeframe, implementation of Alternative 3 would result in significant impacts to the noise aspect of public health and safety.	**Potentially Significant Impact.** Impacts under Alternative 4 would be the same as described under Alternative 2, primarily related to construction noise for during the multi-year construction period. As a result of the extended construction timeframe, implementation of Alternative 4 would result in significant impacts to the noise aspect of public health and safety.	**Potentially Significant Impact.** Impacts under Alternative 5 would be the same as described under Alternative 2, primarily related to construction noise for during the multi-year construction period. As a result of the extended construction timeframe, implementation of Alternative 5 would result in significant impacts to the noise aspect of public health and safety.
Environmental Justice and Protection of Children	**No Impact.** Under the No Action Alternative, the Proposed Action would not be implemented and there would be no change to environmental justice communities. Therefore, no impacts to	**Significant Impact.** Potential environmental justice impacts under Alternative 1 would be considered significant for the transportation resource due to the significant impacts at numerous intersections in the immediate vicinity of OTC. These impacts	**Significant Impact.** Impacts under Alternative 2 would be similar to those described under Alternative 1, but the number of impacted intersections would be greater. Thus, environmental justice impacts related to transportation and protection of	**Significant Impact.** Impacts under Alternative 3 would be similar to those described under Alternative 2, and result in significant environmental justice impacts related to transportation,	**Significant Impact.** Impacts under Alternative 4 would be similar to those described under Alternative 2, and result in significant environmental justice impacts related to transportation,	**Significant Impact.** Impacts under Alternative 5 would be similar to those described under Alternative 2, and result in significant environmental justice impacts related to transportation,

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	environmental justice populations would occur with the implementation of the No Action Alternative.	would tend to increase traffic in that vicinity and adversely affect travel times, and residents of the areas in the immediate vicinity of OTC would be most strongly affected as most travel tends to be close to home. The areas in the immediate vicinity of OTC are either low-income or minority areas, and therefore low-income and minority populations would tend to experience adverse effects disproportionately. The increased traffic in the area would tend to increase health and safety risks from moving vehicles; because there would be adverse health risk associated with increased traffic, there would be a significant impact to protection of children.	children would be significant. Additionally, under Alternative 2, the construction of modernized NAVWAR facilities and mixed-use public-private development on OTC would introduce visual elements that are out of character for 19 historic properties located within 0.5 mile of OTC and extensively alter their setting. The majority of the 19 historic properties would be associated with Hispanic culture pre-1900 and would this result in significant environmental justice impacts under Alternative 2 related to cultural resources.	protection of children, and cultural resources.	protection of children, and cultural resources.	protection of children, and cultural resources.
Public Services	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no induced population growth that would lead to impacts on public services. Therefore, no impacts to public services would occur with implementation of the No Action Alternative.	**Less Than Significant Impact.** Construction and operations associated with Alternative 1 would not increase the permanent population in the ROI. Because there would not be a permanent population increase, no additional public services personnel or facilities would be required. There would, however, be some tax revenue generated by construction that could be used to fund public services with no associated population increase, which could be marginally beneficial to levels of service. Therefore, impacts to public services under Alternative 1 would be beneficial but less than significant.	**Less Than Significant Impact.** Under Alternative 2, approximately 24 additional teachers, 7 new police officers, 6 additional emergency personnel and three new library employees would be required by 2050 to accommodate the estimated increase in population from development. The Navy will work with the city police departments to ensure that response times are not substantially affected by the new development. The costs associated with additional teachers, police officers, fire-rescue resources, and library personnel would be covered by the additional tax revenues and local fees and assessments. If property remains in federal ownership, city standards for parkland would not apply; however, if the property transfers out of federal ownership, the transferee would be responsible to meet city standards for an additional 26.5 acres of parkland based on the increase in population under Alternative 2. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Therefore, Alternative 2 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.	**Less Than Significant Impact.** Under Alternative 3, impacts to public services would be similar to those described for Alternative 2, though slightly less. Therefore, Alternative 3 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.	**Less Than Significant Impact.** Under Alternative 3, impacts to public services would be similar to those described for Alternative 2, though slightly greater. Under Alternative 4, approximately 37 additional teachers, 11 new police officers, 9 additional emergency personnel and five new library employees would be required by 2050 to accommodate the estimated increase in population from development. An additional 40.2 acres of parkland would be required to meet the city's population-based standard for parkland if the property were to transfer out of federal ownership. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Therefore, Alternative 4 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.	**Less Than Significant Impact.** Under Alternative 5, impacts to public services would be similar to those described for Alternative 4, though slightly less. Therefore, Alternative 5 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.
Infrastructure	**Less Than Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur, and there would be no change to the existing infrastructure system or	**Less Than Significant Impact.** Alternative 1 would result in less than significant impacts to the public water system, wastewater infrastructure, stormwater, infrastructure, municipal solid waste, electrical	**Less Than Significant Impact.** Under Alternative 2, the types of construction impacts would be similar to those under Alternative 1, but the construction period would be longer. For operations, NAVWAR operational	**Potentially Significant Impact.** Under Alternative 3, impacts to utilities and infrastructure would be similar to those described for Alternative 2, though slightly less.	**Potentially Significant Impact.** Under Alternative 4, impacts to utilities and infrastructure would be similar to those described for Alternative 2, though slightly greater. NAVWAR operations would be the	**Potentially Significant Impact.** Under Alternative 5, impacts to utilities and infrastructure would be similar to those described for Alternative 4, though slightly less. Therefore, Alternative 5 would result in

Resource Area	No Action Alternative	Alternative 1: NAVWAR-Only Redevelopment	Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use	Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use	Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center	Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center
	demand at the OTC. Therefore, the No Action Alternative would result in less than significant impacts to infrastructure or utilities.	or natural gas infrastructure, or telecommunications during construction or operations.	demand is anticipated to remain similar to existing conditions under Alternative 2. The private mixed use development included under Alternative 2 would result in an increased demand for water, electricity and natural gas, and increased generation of wastewater and solid waste over the No Action Alternative. There is sufficient capacity to accommodate the increase, and no changes in offsite infrastructure would need to occur. Although it appears that there is sufficient water supply capacity to serve Alternative 2, a Water Supply Assessment would be required by the San Diego Public Utilities Department prior to project implementation to determine the extent of potential water demand increases and necessary infrastructure updates. Therefore, Alternative 2 would result in less than significant impacts to infrastructure or utilities during construction or operations.	Therefore, Alternative 3 would result in less than significant impacts to infrastructure or utilities during construction or operations.	same as Alternative 2, and the private mixed use development, including the consolidation of a transit center that would occur on OTC, would result in an increased demand for water, electricity and natural gas, and increased generation of wastewater and solid waste over the No Action Alternative. There is sufficient capacity to accommodate the increase, and no changes in offsite infrastructure would need to occur. Although it appears that there is sufficient water supply capacity to serve Alternative 4, a Water Supply Assessment would be required by the San Diego Public Utilities Department prior to project implementation to determine the extent of potential water demand increases and necessary infrastructure updates. Therefore, Alternative 4 would result in less than significant impacts to infrastructure or utilities during construction or operations.	less than significant impacts to infrastructure or utilities during construction or operations.
Airspace	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to the heights of structures that currently exist on OTC. The existing building heights are lower than the Part 77 horizontal surface, which is 166 feet above mean sea level. Therefore, no impacts to airspace would occur with implementation of the No Action Alternative.	**No Impact.** Alternative 1 would result in the modernization of the facilities on OTC but building heights would remain the same as existing conditions. There would be no impact to safety of flight in the vicinity. Therefore, no impacts to airspace would occur with implementation of Alternative 1.	**Less Than Significant Impact.** New construction associated with Alternative 2 would result in structures up to 240 feet above mean sea level in height, which would penetrate the Part 77 horizontal surface. This would trigger the Federal Aviation Regulations Part 77 notification requirement. The Navy is coordinating with FAA to ensure that proposed building heights associated with Alternative 2 are compatible with FAA's airspace requirements and do not conflict with general aviation and helicopter activities that currently occur in the area. Assuming FAA approves the construction after its review, building heights associated with Alternative 2 would result in less than significant impacts to airspace.	**Less Than Significant Impact.** New construction associated with Alternative 3 would result in structures of the same height as those described for Alternative 2, or up to 240 feet above mean sea level. Thus, potential impacts and coordination with the FAA would be the same as described for Alternative 2. Assuming FAA approves the construction after its review, building heights associated with Alternative 3 would result in less than significant impacts to airspace.	**Less Than Significant Impact.** New construction associated with Alternative 4 would result in structures up to 350 feet above mean sea level, which would penetrate the Part 77 horizontal surface. Thus, potential impacts and coordination with the FAA would be the same as described for Alternative 2. Assuming FAA approves the construction after its review, building heights associated with Alternative 4 would result in less than significant impacts to airspace.	**Less Than Significant Impact.** New construction associated with Alternative 5 would result in structures of the same height as those described for Alternative 4, or up to 350 feet above mean sea level. Thus, potential impacts and coordination with the FAA would be the same as described for Alternative 2. Assuming FAA approves the construction after its review, building heights associated with Alternative 5 would result in less than significant impacts to airspace.
Noise	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline noise levels. Current noise-generating activities at OTC that contribute to the ambient noise environment would continue to occur, but the influence of such noise is inconsequential compared to noise from the airport and vehicle traffic on Interstate 5. Because no changes would occur under the No Action no significant impacts would occur to the noise environment.	**Less Than Significant Impact.** Construction of Alternative 1 would occur over 5 years, would not cause substantial long-term changes to the noise environment in the OTC ROI because construction noise would be temporary and City of San Diego construction noise ordinances would be followed. Alternative 1 would not cause any land uses to become incompatible due to noise. Because aircraft activity at San Diego International Airport and vehicular traffic along Interstate 5 and city streets would remain the primary sources of noise and NAVWAR operations at OTC would remain largely unchanged, there would not be	**Significant Impact.** Unlike Alternative 1, the construction associated with Alternative 2 would occur over 30 years in multiple waves of development. Because construction schedules for the 30-year development window are not available at this time, the construction noise cannot be concluded as insignificant. The extended construction timeframe would cause increased noise levels at noise sensitive locations within 200 feet of OTC, such as the Veteran's Village, Health and Human Services Hospital, and a healthcare facility for an undetermined portion of the 30-year development window. After construction,	**Significant Impact.** Similar to Alternative 2, the construction associated with Alternative 3 would occur over 30 years in multiple waves of development and impacts from construction noise would be the same as described under Alternative 2. Noise from nearby city streets would remain a major contributor in the ROI during operations, which would increase up to 2 dB CNEL under Alternative 3 but not exceed the FHWA's	**Significant Impact.** Similar to Alternative 2, the construction associated with Alternative 4 would occur over 30 years in multiple waves of development and impacts from construction noise would be the same as described under Alternative 2. Noise from nearby city streets would remain a major contributor in the ROI during operations, which would increase up to 3 dB CNEL under Alternative 4 but not exceed the FHWA's definition of a substantial noise increase. Therefore, Alternative 4 would result in significant impacts to the noise environment.	**Significant Impact.** Similar to Alternative 2, the construction associated with Alternative 5 would occur over 30 years in multiple waves of development and impacts from construction noise would be the same as described under Alternative 2. Noise from nearby city streets would remain a major contributor in the ROI which would increase up to 3 dB CNEL under Alternative 5 but not exceed the FHWA's definition of a substantial noise increase. Therefore, Alternative 5 would result in significant impacts to the noise environment.

Resource Area	No Action Alternative	Alternative 1: NAVWAR-Only Redevelopment	Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use	Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use	Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center	Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center
		significant long-term changes to noise created at OTC and experienced off-site. Therefore, Alternative 1 would result in less than significant impacts to the noise environment.	aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the OTC ROI in terms of long-term permanent sources of noise. With the increased traffic due to the private mixed-use development included under Alternative 2, noise from nearby city streets would increase up to 2.5 dB CNEL but would not exceed the FHWA's definition of a substantial noise increase. Therefore, implementation of Alternative 2 would result in significant impacts to the noise environment.	definition of a substantial noise increase. Therefore, Alternative 3 would result in significant impacts to the noise environment.		
Geological Resources	**Potentially Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline topography, geology, or soils. Therefore, no impacts to topography, geology, or soils would occur with implementation of the No Action Alternative. Operations at OTC would continue in the existing buildings without significant renovations and the buildings would not be updated with required facility seismic upgrades or replaced with buildings meeting modern seismic safety standards. Older OTC facilities that have not undergone seismic retrofits and that are situated on hydraulic fill soils are subject to liquefaction. Therefore, the No Action Alternative could result in significant impacts from geologic hazards.	**Potentially Significant Impact.** Under Alternative 1, minor earthwork would be required for grading, to construct flat surfaces, would result in minimal alteration of existing topography and would occur on previously developed, relatively flat surfaces. No important geological features would be disturbed and appropriate implementation of BMPs there would be a minimal, temporary risk of on-site soil erosion during construction, resulting in no significant impact to geology or soils. Existing buildings at OTC Site 1 would be renovated under Alternative 1 to meet seismic requirements. However, if an active or potentially active fault is identified within OTC, these renovations would have minimal effect on reducing damage to buildings impacted directly by a fault rupture or displacement, resulting in potentially significant impacts from geologic hazards.	**Less Than Significant Impact.** Alternative 2 would require significantly more earthwork and grading than Alternative 1. However, there would be minimal alteration of existing topography and construction would occur on previously developed surfaces. A Faulting, Seismicity, and Geologic Hazards Investigation would be conducted during the planning phase to determine if there are any active faults. Further geotechnical analyses would be conducted if active faults are found. Any new construction under Alternative 2 would adhere to required setbacks from any active fault identified during the geotechnical investigation. All new structures would be designed and constructed to comply with the seismic design criteria identified in the Unified Facilities Criteria, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 2 would result less than significant impacts to geological resources.	**Less Than Significant Impact.** Under Alternative 3, revitalization activities are similar to those described under Alternative 2, but the development envelope for private development would be reduced. Alternative 3 would result in similar amounts of earthwork and grading, there would be minimal alteration of existing topography, and construction would occur on previously developed surfaces. Geotechnical analyses would be conducted, and any new construction would adhere to required seismic design criteria, as described for Alternative 2. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 3 would result less than significant impacts to geological resources.	**Less Than Significant Impact.** Under Alternative 4, revitalization activities are similar to those described under Alternative 2, but a portion of OTC would be developed as a transit center. Alternative 4 would result in similar amounts of earthwork and grading as described under Alternative 2. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Geotechnical analyses would be conducted, and any new construction would adhere to required seismic design criteria, as described for Alternative 2. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 4 would result less than significant impacts to geological resources.	**Less Than Significant Impact.** Under Alternative 5, revitalization activities would be similar to those described under Alternative 3, but a portion of OTC would be developed as a transit center and the development envelope for private development would be slightly reduced. Alternative 5 would result in similar amounts of earthwork and grading as described under Alternative 2. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Geotechnical analyses would be conducted, and any new construction would adhere to required seismic design criteria, as described for Alternative 2. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 5 would result less than significant impacts to geological resources.
Water Resources	**Less Than Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur, and this alternative would not result in any changes to existing facilities and land uses at OTC and no impact to water resources would occur. OTC would continue to operate in accordance with the existing stormwater pollution prevention plan and stormwater management plan required by the	**Less Than Significant Impact.** Alternative 1 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards (e.g., low impact development), degrade surface water quality, or violate water quality standards. Alternative 1 construction and operations would be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to	**Less Than Significant Impact.** Impacts to water resources from construction and operation of Alternative 2 would be similar to those described for Alternative 1. Alternative 2 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards (e.g., low impact development), degrade surface water quality, or violate water quality standards. Alternative 2 construction and operations would	**Less Than Significant Impact.** Impacts to water resources from construction and operation of Alternative 3 would be similar to those described previously for Alternative 1. Alternative 3 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with	**Less Than Significant Impact.** Impacts to water resources from construction and operations of Alternative 4 would be similar to those described previously for Alternative 1. Alternative 4 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards.	**Less Than Significant Impact.** Impacts to water resources from construction and operations of Alternative 5 would be similar to those described previously for Alternative 1. Alternative 5 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards.

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
	Navy's Naval Base Point Loma Waste Discharge Requirement permit.	water resources. Implementation of low impact development features and compliance with permit conditions, would not result in exceedances of water quality standards. NAVWAR operational functions at OTC that would occur as part of Alternative 1 would not affect water resources.	be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to water resources. Implementation of low impact development features and compliance with permit conditions, would not result in exceedances of water quality standards. Reductions in the NAVWAR operational functions at OTC that would occur as part of Alternative 2 would not affect water resources.	Navy building standards, degrade surface water quality, or violate water quality standards. Alternative 3 construction and operations would be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to water resources.	Consolidation of a transit center on OTC would not adversely affect water resources because construction and operations would comply with the Construction General Permit and National Pollutant Discharge Elimination System permits that specify development of plans (stormwater pollution prevention plan and stormwater management plans), implementation of best available pollutant control technology and BMPs, and monitoring and reporting requirements necessary to meet water quality criteria and protect the beneficial uses of water resources.	Consolidation of a transit center on would not adversely affect water resources because construction and operations would comply with the Construction General Permit and National Pollutant Discharge Elimination System permits that specify development of plans (stormwater pollution prevention plan and stormwater management plans), implementation of best available pollutant control technology and BMPs, and monitoring and reporting requirements necessary to meet water quality criteria and protect the beneficial uses of water resources.
Biological Resources	**Less Than Significant Impact.** Under the No Action Alternative, redevelopment of OTC to meet NAVWAR's facility requirements would not occur and NAVWAR would continue to operate at OTC. No change from existing conditions would occur and the Navy would continue to maintain and repair the existing facilities, resulting in less than significant impacts to biological resources.	**Less Than Significant Impact.** Under Alternative 1, no natural wildlife habitat would be impacted because it does not occur in the ROI. During potential demolition, construction, repair, and/or renovation activities on OTC Site 1, mammal and bird species that may transit the area would largely avoid the project area and not be impacted by the activities. OTC occurs in and is surrounded by a highly developed, heavily trafficked, and night-lit area. Noise, night lighting, or other temporary, direct impacts associated with demolition, construction, repair, and/or renovation would not have any measurable effect on wildlife species in the vicinity of the project area and would result in less than significant impacts.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 2 would be similar to those under Alternative 1 but would occur on both OTC Site 1 and OTC Site 2, including additional building demolition and construction. Building heights under Alternative 2 would be greater than under Alternative 1 (a maximum of 240 feet compared to 55 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing a greater bird/bat collision risk. Management measures described in Section 3.16.3.7, including bat- and bird-friendly design features on new buildings and structures, would be applied under Alternative 2 to avoid and/or minimize potential impacts to wildlife during demolition, construction, repair, and/or renovation activities. Therefore, Alternative 2 would result in less than significant impacts to biological resources.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 3 would be similar to those under Alternative 2. Management measures described in Sections 3.16.3.7 would be applied under Alternative 3 to avoid and/minimize or minimize avoid potential impacts to wildlife during demolition, construction, repair, and/or renovation activities. Therefore, Alternative 3 would result in less than significant impacts to biological resources.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 4 would be similar to those under Alternative 2. However, building heights under Alternative 4 would be greater than under Alternative 2 (a maximum of 350 feet compared to 240 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing an even greater bird/bat collision risk. Management measures described in Section 3.16.3.7, including bat- and bird-friendly design features on new buildings and structures, would be applied under Alternative 4 to avoid and/or minimize potential impacts to wildlife during demolition, construction, repair, and/or renovation activities in an already heavily developed and urbanized setting. Therefore, Alternative 4 would result in less than significant impacts to biological resources.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 5 would be similar to those under Alternative 2. However, building heights under Alternative 5 would be greater than under Alternative 2 (a maximum of 350 feet compared to 240 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing an even greater bird/bat collision risk. Management measures described in Section 3.16.3.7, including bat- and bird-friendly design features on new buildings and structures, would be applied under Alternative 5 to avoid and/or minimize potential impacts to wildlife during demolition, construction, repair, operation, and/or renovation activities in an already heavily developed and urbanized setting. Therefore, Alternative 5 would result in less than significant impacts to biological resources.

Legend: BMPs = best management practices; CO = carbon monoxide; dB = decibel; CNEL = community noise equivalent level; FAA = Federal Aviation Administration; FHWA = Federal Highway Administration; GCP = gross county product; GHG = greenhouse gases; HAP = hazardous air pollutant; IR = Installation Restoration; NAVWAR = Naval Information Warfare Systems Command; NO_x = nitrogen oxides; OTC = Old Town Campus; ROI = Region of Influence; VOCs = volatile organic compounds.

Draft

Environmental Impact Statement
Navy Old Town Campus Revitalization
San Diego, California

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Abbreviations and Acronyms

Acronym	Definition
3D	three-dimensional
ACHP	Advisory Council on Historic Preservation
ADT	average daily traffic
AICUZ	Air Installation Compatible Use Zone
APE	Area of Potential Effect
AVE	Area of Visual Effect
BMP(s)	best management practice(s)
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
dB	decibel
DNL	day-night average sound level
DoD	Department of Defense
DPM	Diesel-exhaust particulate matter
EIS	Environmental Impact Statement
EIR	Environmental Impact Report
EO	Executive Order
°F	degrees Fahrenheit
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GCP	gross county product
GHG	greenhouse gas(es)
GMSL	global mean sea level
HAP	hazardous air pollutant
HOV	high-occupancy vehicle
IR	Installation Restoration
KOP	key observation point
LAU	landscape assessment unit
LEED	Leadership in Energy and Environmental Design
LOS	level of service
MCRD	Marine Corps Recruit Depot
mph	
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities Engineering Systems Command
NAVWAR	Naval Information Warfare Systems Command
Navy	Department of the Navy
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NOA	notice of availability
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
OPNAVINST	Office of the Chief of Naval Operations Instruction
OTC	Old Town Campus
PCB	polychlorinated biphenyl
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
ppm	parts per million
RCP	Representative Concentration Pathways
RFI	Request for Interest
ROD	Record of Decision
ROI	region of influence
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas and Electric
SHPO	State Historic Preservation Officer
SIP(s)	State Implementation Plans

Acronym	Definition	Acronym	Definition
SMAQMD	Sacramento Metropolitan Air Quality Management District	UFC	Unified Facilities Criteria
		U.S.	United States
SO_2	sulfur dioxide	U.S.C.	U.S. Code
SOx	sulfur oxides	USEPA	U.S. Environmental Protection Agency
TAC(s)	toxic air contaminants		
TCP(s)	traditional cultural properties	USFWS	U.S. Fish and Wildlife Service
TDM	Transportation Demand Management	V/C	volume to capacity
		VOC(s)	volatile organic compounds
UCSD	University of California San Diego	World War II	WWII

1 Purpose for and Need for Proposed Action

1.1 Introduction

The United States (U.S.) Department of the Navy (Navy) prepared this Environmental Impact Statement (EIS) to evaluate the potential environmental consequences of the proposed modernization of Naval Base Point Loma Old Town Campus (OTC), San Diego, California (Figure 1-1). OTC is home to the Naval Information Warfare Systems Command (NAVWAR). The existing buildings and facilities used by NAVWAR on OTC are outdated, inefficient, and not conducive to sustaining NAVWAR's mission requirements. The Proposed Action is the modernization of NAVWAR's facilities on OTC through demolition, construction, and renovation of buildings, utilities, and infrastructure. The purpose is to provide modern facilities to enhance NAVWAR's operational and sustainment effectiveness through redevelopment of OTC.

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

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

This EIS considers five action alternatives representing the two redevelopment scenarios above: one action alternative would redevelop OTC by the Navy alone for sole NAVWAR use, and four action alternatives would redevelop OTC in collaboration with other public agencies and/or private developers for varying densities of mixed use, to include NAVWAR use. The details of each action alternative are presented in Chapter 2.

The Proposed Action is the modernization of NAVWAR's facilities on OTC through demolition, construction, and renovation of buildings, utilities, and infrastructure. This could be accomplished using either Navy redevelopment alone or public-private developer collaboration.

The Navy, serving as lead agency, prepared this document in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] parts 1500-1508); Navy regulations for implementing NEPA (32 CFR part 775); and all applicable federal environmental laws and agency guidance (Appendix B).

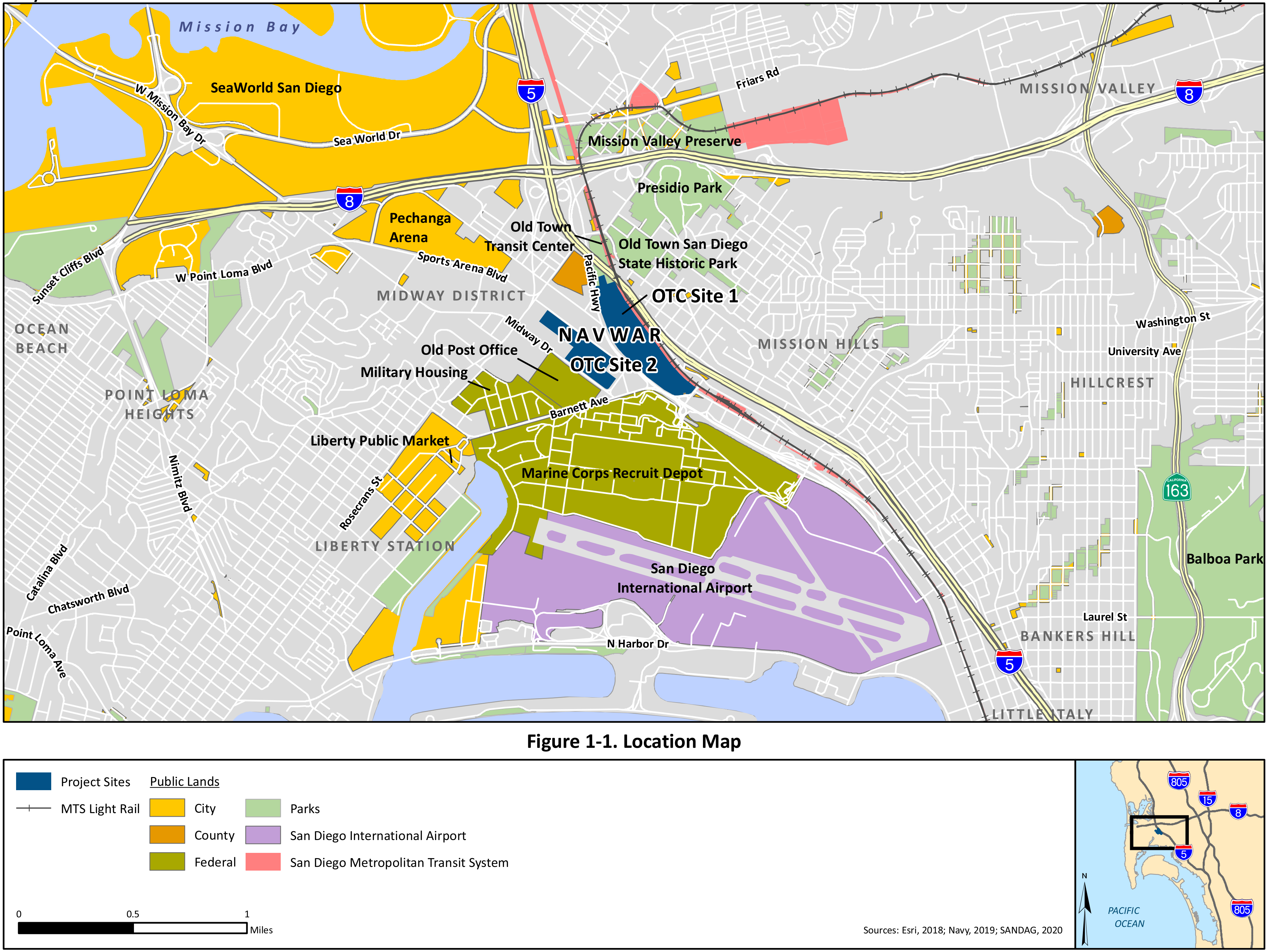


Figure 1-1. Location Map

The San Diego Association of Governments (SANDAG) is a cooperating agency for the development of the EIS pursuant to NEPA and associated regulations. As the San Diego regional planning agency, SANDAG possesses unique expertise and authority with respect to potential impacts associated with land use, viewsheds, transportation, and construction that could result from the proposed redevelopment of OTC. The Navy invited SANDAG to participate as a cooperating agency in the EIS. SANDAG and the Navy also signed an agreement on September 19, 2019 and a follow-on agreement on January 23, 2020 to define collaboration between the agencies regarding the potential redevelopment of OTC with new NAVWAR facilities, a transit center, and mixed-use private development. The agreements are included as Appendix P of this EIS.

1.2 Background

1.2.1 NAVWAR Mission

NAVWAR's mission is to rapidly deliver information warfighting capability through use of research and development. NAVWAR supports the Navy's growing cyberspace capabilities and provides the hardware and software that support manned and unmanned systems at sea, land, in the air, and in space. NAVWAR provides the essential communications the U.S. needs for strategic defense, communications, and deterrence. NAVWAR's mission is critical throughout the Navy as it provides network protection, secure information, essential systems, and cyber defense.

NAVWAR is responsible for the development, delivery, and maintenance of the Navy's communications, networks, information, and space capabilities that are vital to the Navy and to national security. NAVWAR changed its name from Space and Naval Warfare Systems Command to NAVWAR in June 2019 to match the changing environment of cybersecurity. Information- and cyber-warfare have become fundamental national security risks and are therefore essential concepts within the Navy's defense strategy.

NAVWAR has been headquartered at OTC since 1997 and provides support for more than 150 separate Navy programs. It is strategically located near several Navy and Marine Corps installations, training ranges, and test facilities (Figure 1-2). NAVWAR employs approximately 5,200 military and civilian personnel (94 percent civilian) in the San Diego area. The greater San Diego area also provides NAVWAR with an important network of defense contractors, research firms, and academic institutions. NAVWAR's location at OTC provides unique local opportunities for collaborative testing, research, and employment. It generates $3.2 billion in revenue annually for the local economy (San Diego Military Advisory Council, 2019).

NAVWAR oversees Naval Information Warfare Center Pacific, located at OTC. With significant laboratory and support facilities, Naval Information Warfare Center Pacific's focus is research, development, engineering, and support of integrated cyber and space systems.

NAVWAR employs approximately 5,200 military and civilian personnel in San Diego, and its OTC headquarters is strategically located near other Navy and Marine Corps installations and a network of research firms and academic institutions.

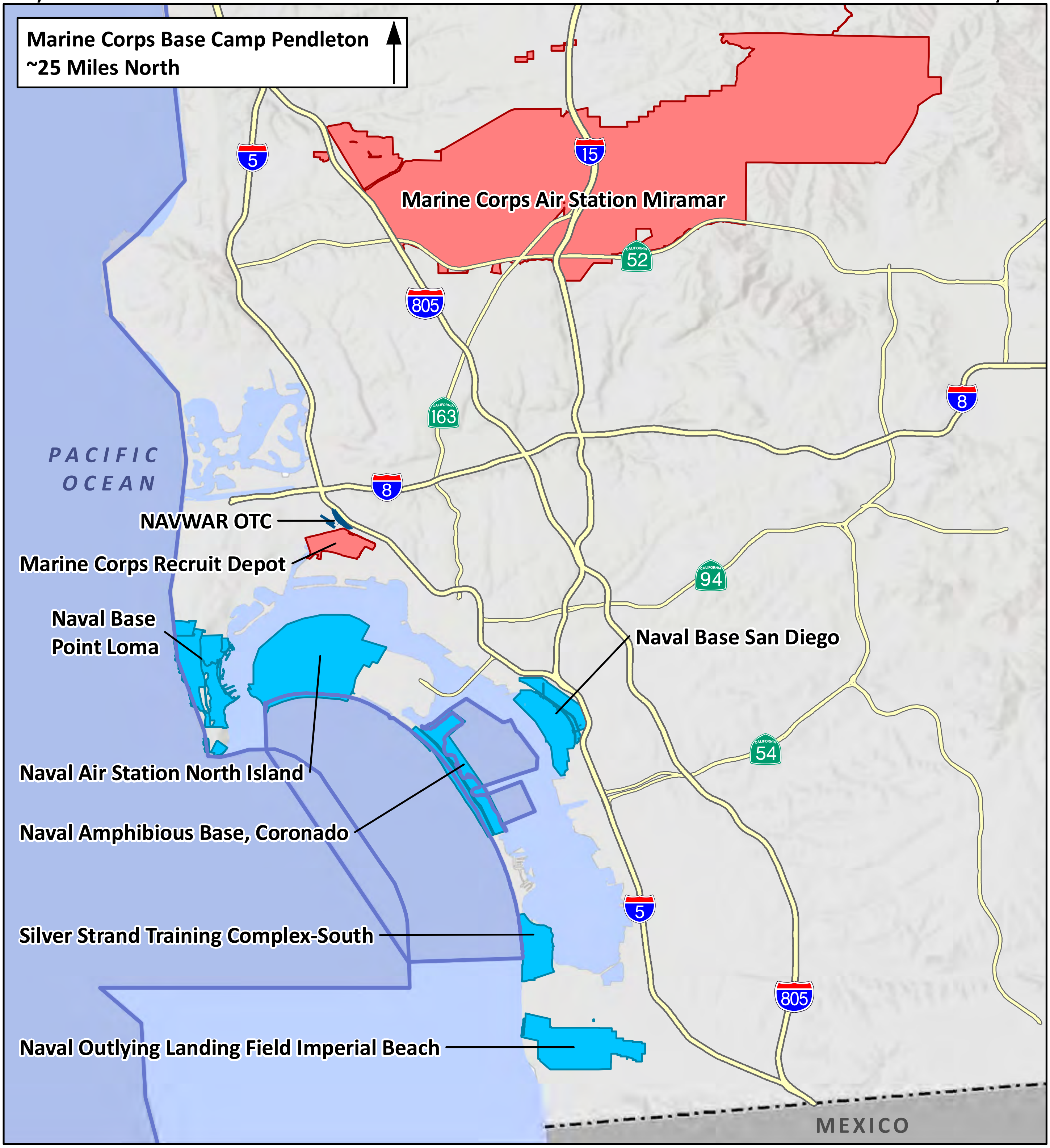
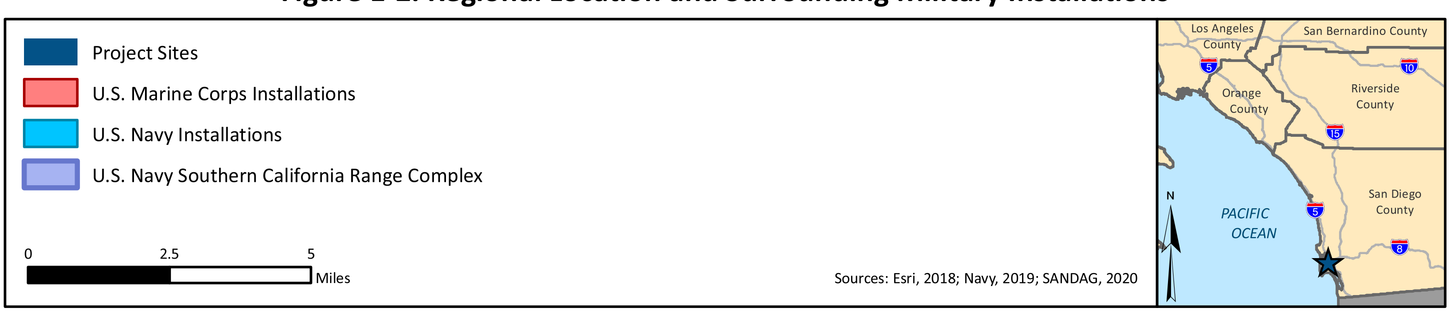


Figure 1-2. Regional Location and Surrounding Military Installations



1.2.2 NAVWAR OTC Facility History, Current Condition, and Requirements

1.2.2.1 OTC History

Since 1940, the OTC property has been used for military and industrial manufacturing support activities. OTC historically was known as Consolidated Aircraft Plant 2 during World War II (WWII) and Air Force Plant 19 during the Cold War. In early 1988, the U.S. Air Force declared the site as "excess of Air Force ownership" and later transferred Plant 19 to the Navy in 1994. In 1997, as a result of Base Realignment and Closure recommendations, OTC became NAVWAR headquarters, and the facilities have been used by NAVWAR ever since.

1.2.2.2 Current Condition of OTC Facilities

NAVWAR facilities at OTC consist of WWII-era aircraft manufacturing warehouses and associated administrative office buildings (Photos 1 and 2). Some of these buildings have been partially modernized to provide training facilities, administrative office space, and laboratory space to support NAVWAR's operations. Nevertheless, the existing hangars and WWII-era buildings do not meet current seismic design requirements, or applicable antiterrorism force protection standards, nor do they provide controlled access and independent utility systems for secure spaces. Therefore, current facilities on OTC are insufficient to meet NAVWAR's requirements.

Photo 1 Dilapidated Structures on OTC (Exterior)

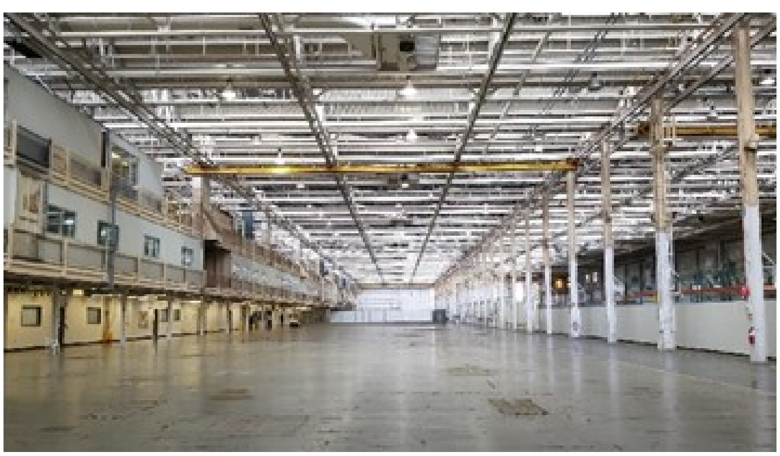


Photo 2 Dilapidated Structures on OTC (Interior)

The aging, 1940s-era facilities are beyond their useful life and their deteriorated condition negatively affects NAVWAR's ability to accomplish its mission securely and safely. The facilities are not adaptable, sustainable, or compatible with NAVWAR's growing mission requirements that are critical to national defense.

The age and condition of OTC's facilities is impacting NAVWAR's ability to accomplish its mission securely and safely.

1.2.2.3 Facility Requirements

To execute its high-tech operations and enhance mission capability and sustainment, NAVWAR requires safe, secure, and modern facilities. All facilities must meet applicable antiterrorism force protection standards and seismic design requirements. In addition, secure facilities require controlled access and independent utility systems. NAVWAR's facility requirements include:

- Laboratory space for diagnostics, including the following activities: testing, evaluation, and assembly of computers and communications equipment. NAVWAR also uses laboratory space for cybersecurity, intelligence, surveillance, and reconnaissance functions. Laboratory spaces may be designated as secure, requiring controlled access and specialized infrastructure. Some laboratory space is utilized as an electrical maintenance shop and a paint shop. These maintenance and paint functions support the cybersecurity mission but could be located off OTC.
- Warehouse and storage space to store crates of materials, sensitive electronic and computer equipment, and other materials required to support the mission. These functions also support the cybersecurity mission but are not always utilized on a daily basis and could be located off OTC.
- Office and administrative space for conducting executive operations and comptroller, contracts, legal, program management, engineering, and administrative support functions. Dedicated conference and auditorium space are included under this use category.
- Parking for assigned personnel and visitors.

1.2.3 Project History

In September 2018, to help identify possible alternatives to Navy-only redevelopment, the Navy issued a Request for Interest (RFI) to gauge interest and solicit ideas for the redevelopment of OTC through a public-private redevelopment arrangement. Under a public-private development agreement, the developer would pay for construction of NAVWAR facilities in exchange for the opportunity to develop the remaining OTC land. In November 2018, the Navy held an Industry Day event in connection with the RFI. The event highlighted the Navy's willingness to consider various concepts to achieve the Navy's proposed action using, for example, a long-term lease or a fee transfer of property to facilitate a public-private redevelopment. The RFI process resulted in 12 responses, four of which contained substantive market research for potential mixed-use redevelopment scenarios on OTC in addition to the construction of NAVWAR's facilities. The four substantive responses were utilized in developing a range of reasonable alternatives for modernization of OTC.

As part of their response to the RFI, SANDAG is also considering OTC as a potential location for a Central Mobility Hub to provide a direct mass transit connection to the San Diego International Airport. SANDAG may decide in the future to develop the transit center into a larger Central Mobility Hub.

The agreements between the Navy and SANDAG allow for the sharing of expertise to aid the Navy's development of action alternatives and the analysis of environmental impacts. SANDAG has provided studies and other information that aided the identification and development of mixed-use redevelopment options that would be viable at OTC.

As the federal action proponent, the Navy is responsible for analyzing the potential environmental effects of the project alternatives (including the No Action Alternative), identifying a preferred alternative, and ultimately selecting which alternative to implement at the end of the NEPA process.

1.3 Location

1.3.1 Project Site

The OTC property is located adjacent to Pacific Highway in the City of San Diego and consists of two sites totaling 70.5 acres: OTC Site 1 (48.7 acres) and OTC Site 2 (21.8 acres) (Figure 1-3). The two sites are separated by Pacific Highway and connected via a pedestrian overpass. The OTC property is almost completely (95 percent) developed and covered with buildings and pavement (Navy, 2020a; California Regional Water Quality Control Board, 2014).

OTC Site 1 is bordered by Pacific Highway to the west, Interstate 5 to the north and east, a railroad right-of-way to the east, and Barnett Avenue and Witherby Street to the south. Current facilities on OTC Site 1 include three former WWII-era aircraft manufacturing warehouses (Buildings 1, 2, and 3) (approximately 310,000 square feet each) that are used as administrative offices, laboratory and warehouse spaces, and several smaller buildings (Buildings 4, 7, 8, 27, 28, and 34). Paved access roads run between the buildings. Paved vehicle parking and materials storage areas are located throughout the remainder of OTC Site 1.

OTC Site 2 is located west of OTC Site 1 and is bordered by Midway Drive to the west, Rosecrans Street to the north, Pacific Highway and Sports Arena Boulevard to the east, and Enterprise Street to the south. OTC Site 2 is dominated by operational supply Building 2555 (approximately 136,000 square feet). The remainder of OTC Site 2 consists of surface parking and a few small outbuildings, including Buildings 34 and 40.

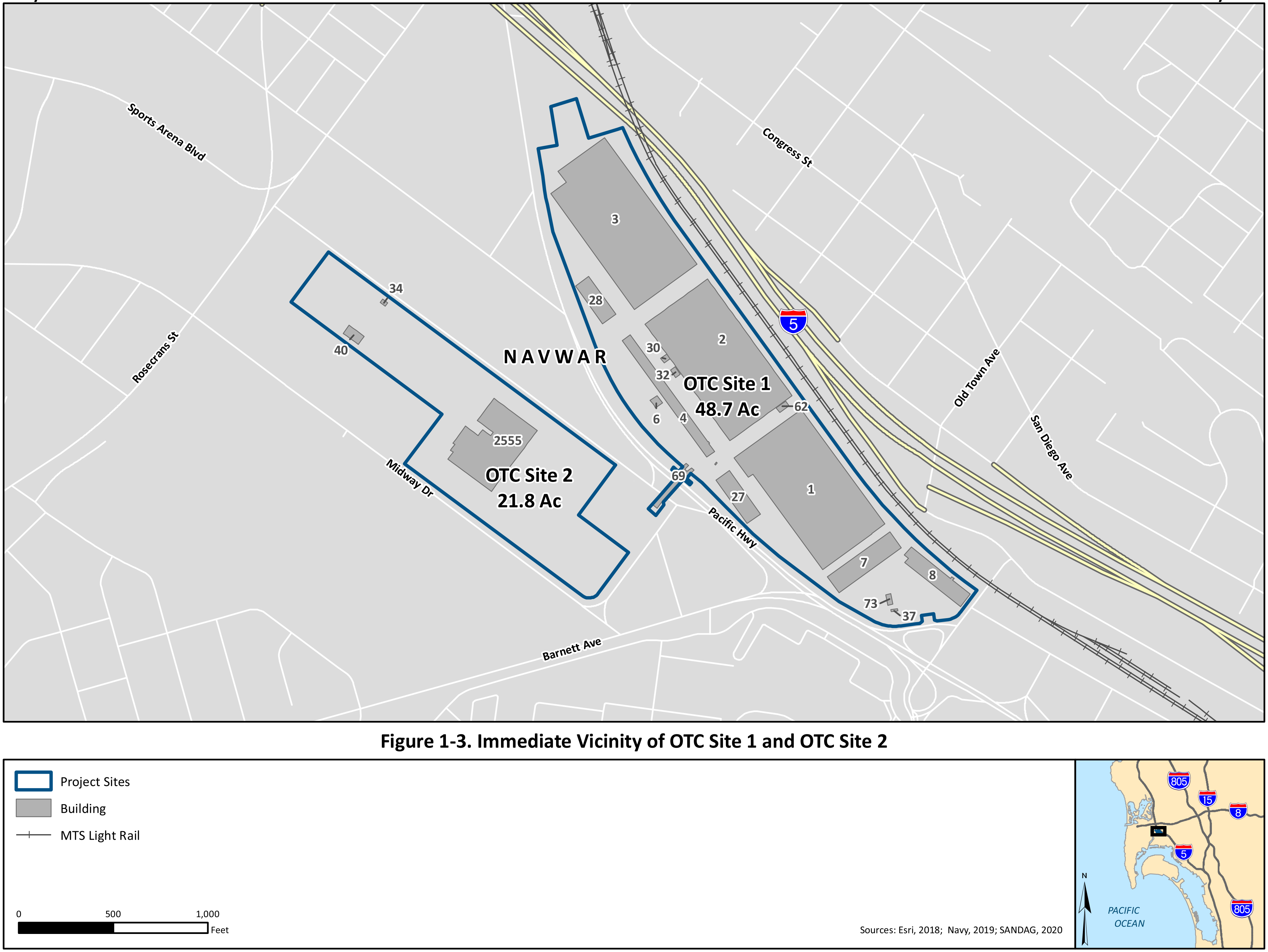


Figure 1-3. Immediate Vicinity of OTC Site 1 and OTC Site 2

1.3.2 Regional Setting

OTC is located within the City of San Diego's Midway-Pacific Highway Community Planning Area. The area is an urbanized neighborhood situated north of downtown San Diego, between the Old Town and Point Loma communities. The Midway-Pacific Highway community covers approximately 800 acres of mostly flat land and encompasses OTC, the central Midway area, the Pacific Highway corridor, and Marine Corps Recruit Depot (MCRD) San Diego.

The area has a commercial core containing numerous shopping centers, institutional facilities, multi-family residential developments, visitor-oriented uses, and older industrial areas. The area is characterized by wide streets, flat topography, and a mix of auto-oriented large and small commercial developments. The Pacific Highway corridor located between Interstate 5 on the east and MCRD and San Diego International Airport on the west, contains commercial and industrial uses, multi-family residential developments, and airport-related commercial uses.

The Old Town Community Planning Area is located northeast of OTC. This 230-acre planning area is home to the Old Town San Diego State Park. The community is located south of Interstate 8 and Mission Valley, east of Interstate 5 and the Midway-Pacific Highway community, and west of the Mission Hills neighborhood of the Uptown Community Planning Area. Figure 1-4 shows the Midway-Pacific Highway and other community planning areas in the vicinity of OTC.

Pacific Highway borders the entire west and southwestern edge of OTC Site 1, and a variety of commercial and industrial properties are located west, across Pacific Highway. Downtown San Diego is located approximately 2 miles south, and the Point Loma and Liberty Station neighborhoods are located southwest of the project site. Interstate 5 is located directly north of OTC Site 1 and the Interstate 5/Interstate 8 interchange is located northwest of OTC Site 1.

OTC is located in a commercial and industrial area near downtown San Diego, between the Old Town and Point Loma communities, and adjacent to the Old Town Transit Center.

The Burlington Northern and Santa Fe railroad right-of-way parallels the entire eastern border of OTC Site 1 and is currently used for passenger and commercial rail service as well as local commuter trolley operations. The Old Town Transit Center, a multi-modal transportation station providing local bus and trolley service and regional rail service, is located approximately 400 feet north of OTC Site 1. San Diego International Airport is located south-southeast of OTC.

1.4 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide modern facilities to enhance NAVWAR's operational and sustainment effectiveness through redevelopment of OTC. The current facilities are beyond their useful life and do not comply with current seismic design requirements, applicable antiterrorism force protection standards, or provide controlled access and independent utility systems for secure spaces.

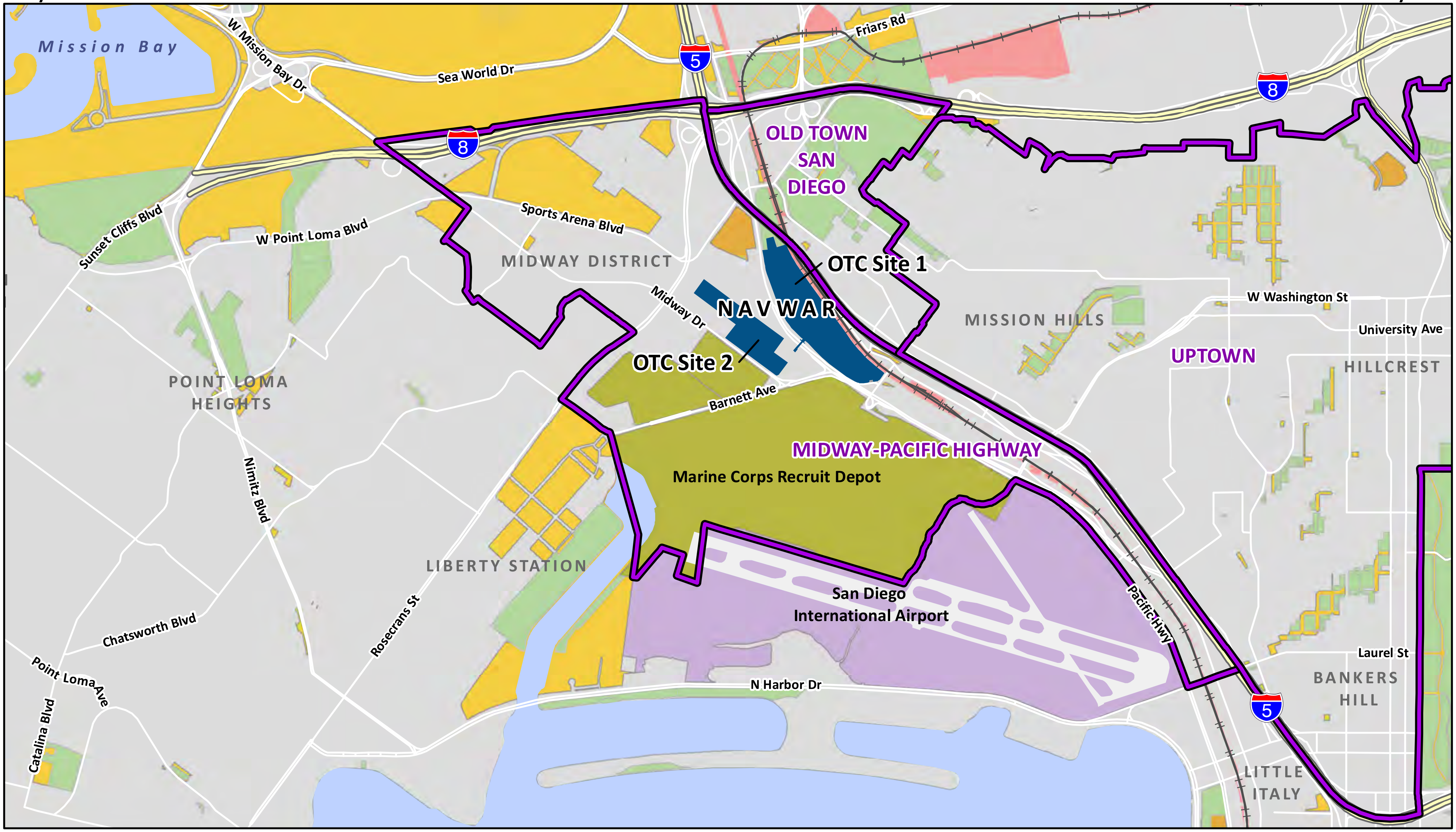
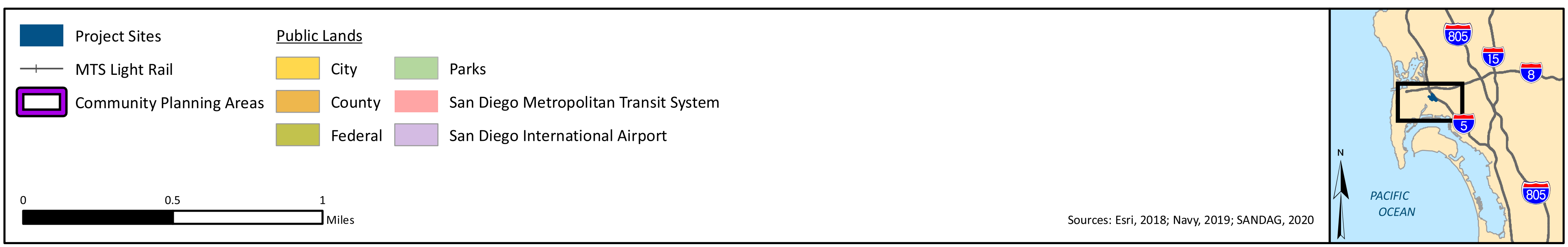


Figure 1-4. City of San Diego Community Planning Areas in the Vicinity of the Project Sites



The Proposed Action is needed to enable NAVWAR to meet its operational and mission sustainment requirements. Secure and modern facilities are necessary to meet information technology, artificial intelligence, and cyber-warfare operational requirements. Having such facilities are critical to meeting NAVWAR's national defense mission.

Purpose*: to provide modern facilities to enhance NAVWAR's operational and sustainment effectiveness through redevelopment of OTC.*

Need*: to enable NAVWAR to meet its operational and mission sustainment requirements.*

The OTC location is critical to achievement of the NAVWAR mission because it is a nexus to other regional military installations, defense contractors, research firms, and academic institutions in the area. NAVWAR's location near regional transportation corridors and mass transit also facilitates the efficient travel of NAVWAR employees and visitors to and from the facility. In addition, the Midway-Pacific Highway Community Plan identifies NAVWAR as being particularly important to the current and future economies of the Midway-Pacific Highway community and the City of San Diego (City of San Diego, 2018a).

The Navy considered the potential relocation of NAVWAR functions to other regional military installations. The evaluation determined that no regional facilities could accommodate the NAVWAR facility requirements of just over 1 million square feet.

With implementation of the Proposed Action at OTC, NAVWAR would be more operationally efficient and fully capable of meeting their mission requirements into the foreseeable future. In this regard, the Proposed Action would fulfill the Navy's execution of its congressionally mandated roles and responsibilities under 10 U.S. Code (U.S.C.) section 5062.

Due to the size of the OTC property, and the opportunity to optimally design the modern NAVWAR facilities and functions to achieve greater operational efficiency, the Navy has determined that OTC could support redevelopment that not only modernizes NAVWAR's facilities, but also introduces new uses without negatively impacting NAVWAR's security or mission requirements. Therefore, the purpose of and need for the Proposed Action can be achieved through Navy redevelopment alone, or in collaboration with private developers to fund NAVWAR redevelopment on OTC through mixed-use redevelopment on other parts of the OTC property.

1.5 Scope of Environmental Analysis

1.5.1 Approach to Analysis

1.5.1.1 NEPA Considerations

This EIS identifies and evaluates the potential environmental consequences of the No Action Alternative and five action alternatives for modernization of NAVWAR facilities at OTC. The NAVWAR facilities portion of all five action alternatives is well-defined and based on detailed facility requirements as described in Section 1.2.2.3. Alternative 1 includes only NAVWAR facility redevelopment.

Alternatives 2 through 5 include varying amounts of additional mixed-used redevelopment that is conceptual at this early stage in the process. Project-specific details such as exact locations of utilities, buildings, parks, and building design, construction phasing, and site circulation are not known for the non-NAVWAR redevelopment portion of these four alternatives. Site-specific locations, design features, and phasing will be dependent on potential public-private opportunities and objectives yet to be determined. To account for this uncertainty, the EIS considers a market-based mix of uses and a reasonable range of densities. The range of mixed-use development densities was derived from responses to the Navy's 2018 RFI. The full scope of the Proposed Action Alternatives is presented in Chapter 2, *Proposed Action and Alternatives*, including a buildout analysis and development density for each action alternative. Where possible, to facilitate impacts analysis, reasonable assumptions have been made with regard to utilities, phasing, site circulation, and other parameters. All the alternatives provide sufficient information to support a project-specific analysis for OTC, technical evaluation, public involvement, and informed decision making. However, it is possible that public-private redevelopment plans for the OTC property may deviate from the assumptions and descriptions analyzed in this EIS. If this becomes the case, additional environmental review under NEPA and/or California Environmental Quality Act (CEQA) review may be required.

This EIS supports early planning, decision making, and public involvement for the Proposed Action Alternatives.

To comply with NEPA, the discussion of the affected environment (i.e., existing conditions) focuses on those resource areas that would potentially be subject to effects from all the alternatives, including a No Action Alternative.

1.5.1.2 CEQA Considerations

CEQA applies to discretionary actions of California state and local public agencies that may result in a direct or reasonably foreseeable indirect change to the physical environment. Although CEQA is a California planning law that does not apply to federal actions, the Proposed Action Alternatives may trigger future CEQA obligations under various scenarios of public-private development. For example, if property leaves federal ownership under Alternatives 2 through 5, the private developer may be required to meet CEQA obligations in connection with local permits and approvals for development. If instead property stays in federal ownership under a lease scenario, local land use approvals would not normally be required, but if SANDAG or another state or local government agency is required to take discretionary action(s) CEQA analysis would be required. CEQA requires the preparation of an Environmental Impact Report (EIR) where there is a fair argument, based on substantial evidence, that the action may result in a potentially significant environmental impact. CEQA and CEQA-implementing regulations promulgated by the California Natural Resources Agency set forth the requirements that apply to the preparation of EIRs. CEQA (Public Resources Code section 21083.7) and CEQA-implementing regulations (California Code of Regulations, title 14, section 15221) allow agencies to rely on an EIS prepared pursuant to NEPA for purposes of CEQA compliance in lieu of preparing a separate EIR, if the EIS satisfies CEQA's requirements for EIRs. In addition to this general CEQA framework, the California legislature recently approved Assembly Bill 2731, which provides for reliance on the Navy EIS for CEQA purposes under circumstances specified in the bill. Appendix A provides additional background on Assembly Bill 2731 and CEQA in general.

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

Actions That Exceed the Scope of the Analysis in the EIS

SANDAG is analyzing the possible locations for the development of a multi-modal transportation hub known as the Central Mobility Hub. SANDAG is currently conducting environmental analysis on these options and will be preparing a separate EIR under CEQA. The Central Mobility Hub would provide a direct mass transit connection that links the San Diego International Airport to regional transit (rail and bus) services. In 2019, the SANDAG Board of Directors identified four options to connect regional transit service to the airport; two of the options included development of the Central Mobility Hub on OTC.

The Central Mobility Hub could modify local transit patterns associated with the existing Old Town Transit Center, and include associated infrastructure improvements to highways, freeways and other facilities. Until such time that a specific proposal for a Central Mobility Hub at OTC has been selected by the SANDAG Board of Directors, site-specific review of the transit uses is not ripe for environmental analysis and is not analyzed in detail in this EIS. In addition to future review of the Central Mobility Hub by SANDAG under CEQA, the Navy or another federal agency such as the Department of Transportation would perform additional NEPA analysis at that time, to the extent additional analysis is required under NEPA.

Because the development of a Central Mobility Hub at OTC with direct transit connections to the airport is a reasonably foreseeable future project, it is addressed in Chapter 4*, Cumulative Impacts*, of this EIS.

Any future proposals for development of a Central Mobility Hub at OTC will comply with all applicable environmental planning regulations.

Figure 1-5 summarizes what is analyzed in this EIS and the separate environmental review process SANDAG would conduct for a potential future mass transit connection to the San Diego International Airport.

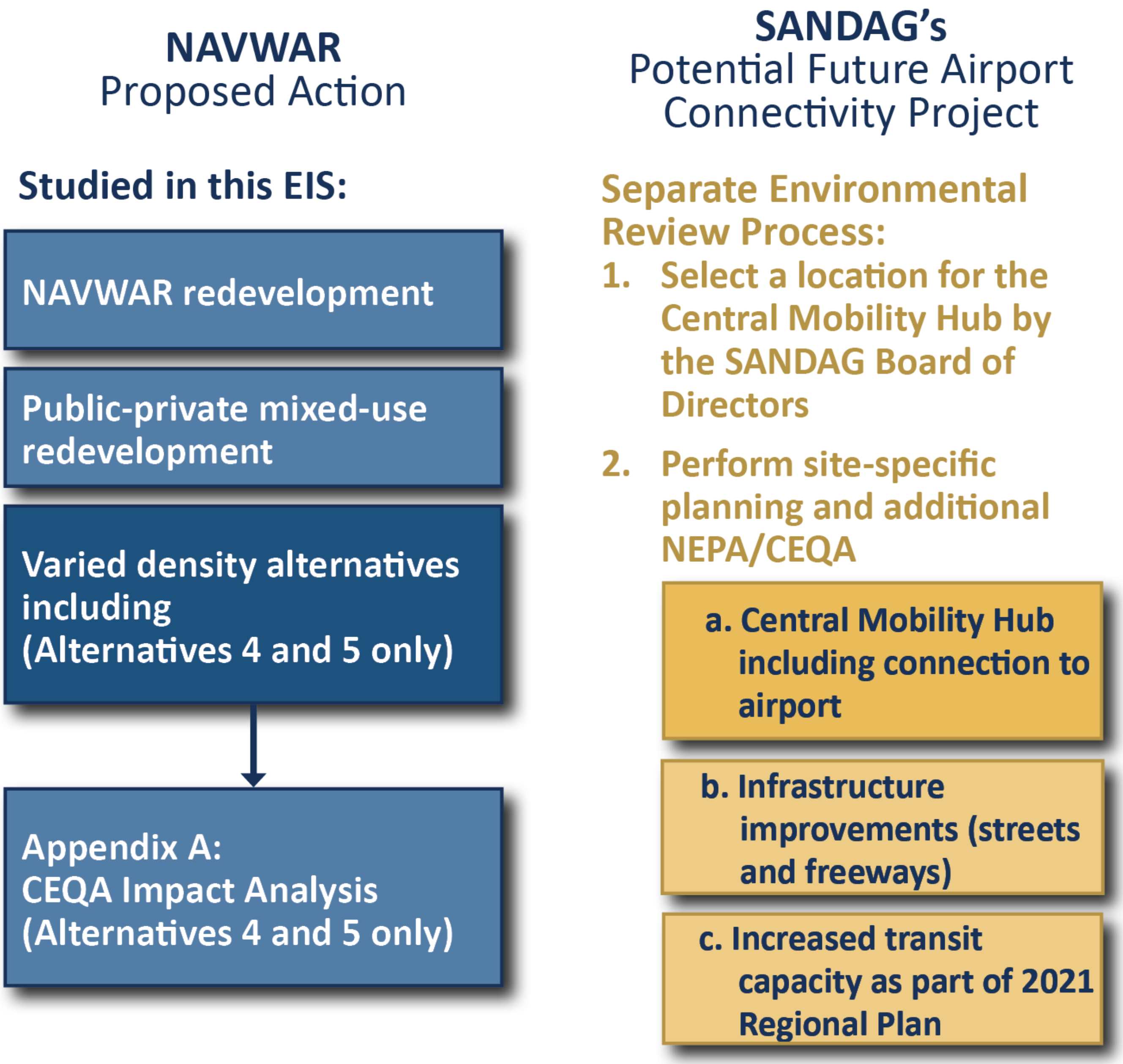


Figure 1-5 EIS Scope of Analysis and Future Environmental Review Processes

1.5.2 Organization of the Environmental Impact Statement

This EIS is organized into the following chapters and appendices.

- Chapter 1 – provides background information and describes the purpose and need for the Proposed Action.
- Chapter 2 – describes the Proposed Action and alternatives considered.
- Chapter 3 – describes the environment potentially affected by the Proposed Action Alternatives and analyzes the environmental consequences of each alternative.
- Chapter 4 – describes the cumulative effects of the Proposed Action Alternatives in conjunction with other past, present, and reasonably foreseeable future projects in the area.
- Chapter 5 – discusses other considerations required by NEPA.
- Chapter 6 – identifies the references used in preparation of this EIS.
- Chapter 7 – presents a list of EIS preparers and contributors.
- Chapter 8 – provides the distribution list for this EIS.

The Navy prepared this EIS based upon federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action Alternatives. Appendix B presents the relevant laws and regulations. Chapter 5 (Table 5-1) presents a description of the Proposed Action Alternatives' consistency with these laws, policies, and regulations, as well as the names of regulatory agencies responsible for their implementation.

The appendices provide detailed supporting analyses and studies for this EIS, including:

- Appendix A, CEQA Analysis
- Appendix B, Relevant Laws and Regulations
- Appendix C, Action Alternatives Development
- Appendix D, Air Quality Methodology and Calculations
- Appendix E, Transportation Impact Assessment
- Appendix F, Visual Impact Assessment
- Appendix G, Socioeconomics Study
- Appendix H, Cultural Resources Technical Report
- Appendix I, Historical Evaluation Report
- Appendix J, National Historic Preservation Act Section 106 Documentation
- Appendix K, Tribal Government-to-Government Documentation
- Appendix L, Infrastructure Calculations
- Appendix M, Discussion of Noise and Its Effects on the Environment
- Appendix N, Coastal Consistency Determination
- Appendix O, Public Involvement
- Appendix P, Agency Correspondence

1.6 Key Documents

Key documents are sources of information incorporated into this EIS. Documents are considered to be key because of similar actions, analyses, or impacts that may apply to this Proposed Action Alternatives.

CEQ guidance encourages incorporation of key documents by reference. Documents incorporated by reference in part or in whole include:

- Airport Connectivity Analysis (SANDAG, 2019), which presents an evaluation of concepts for improved transit and roadway connectivity to San Diego International Airport.
- Request for Interest (Navy, 2018) issued by the Navy in September 2018 to solicit interest and ideas for the redevelopment of OTC through a public-private redevelopment agreement.
- Naval Base Point Loma Old Town Campus NAVWAR Revitalization Requirements Package (Navy, 2020b), which presents NAVWAR facility requirements that form the basis of the proposed modernizations.
- Old Town Campus Recapitalization Plan (Working Draft) (Navy, 2020c), which presents NAVWAR recapitalization requirements that form the basis of the proposed modernizations.
- San Diego Military Economic Impact Study (San Diego Military Advisory Council, 2019), which presents important economic information used in the evaluation of socioeconomic impacts in the EIS.
- 2019 Federal Regional Transportation Plan (SANDAG, 2019), which presents regional transportation strategies used in the planning process and the evaluation of potential cumulative impacts in this EIS.

1.7 Public and Agency Participation and Intergovernmental Coordination

CEQ regulations direct agencies to involve the public in preparing and implementing their NEPA procedures. The NEPA environmental review process is intended to help public officials make decisions based on an understanding of the environmental consequences and take actions that protect, restore, and enhance the environment (40 CFR 1500.1). In addition to NEPA public involvement, the Navy is also conducting outreach to educate, inform, and enable public and other agency participation in the Navy planning efforts.

The Navy published a Notice of Intent to prepare an EIS in the Federal Register on January 24, 2020 (85 Federal Register 4309). The Notice of Intent announced the public scoping period and the dates, times, and locations of public scoping meetings. Notices announcing the intent to prepare an EIS, and the public scoping meeting details were published in five newspapers: *The San Diego Union Tribune, Peninsula Beacon, Uptown News, Presidio Sentinel,* and *El Latino* (a Spanish-language newspaper), and on the project website: www.NAVWAR-revitalization.com.

Public input is an essential part of the EIS process. The Navy reviewed all scoping comments and used them in the preparation of this EIS.

Public input is an essential part of the EIS process. The Navy solicited public and agency comments during a scoping period from January 24, 2020, through February 24, 2020. The Navy held scoping meetings on February 13, 2020 and February 19, 2020 at the Liberty Station Conference Center. During the public scoping period, the Navy received 125 comments. Respondents submitted their comments through a project website, in writing at the public scoping meetings, by postal mail, verbally at the public scoping meetings via a court reporter, and via email. The Navy reviewed all scoping comments and used them in the preparation of this EIS. A summary of the public scoping process and a summary of public comments is included in Appendix O. The comments received generally cover the following topics:

- Purpose and need: local need for transit solutions, local need for affordable housing, preserving the NAVWAR mission.
- Alternatives: preference for high-density mixed-use redevelopment, enhancing transit options, reducing traffic, property transfer.
- Air quality: climate crisis and climate action plan, increasing alternative transportation (mass transit, walking, biking), air pollution.
- Transportation/traffic: traffic flow, increased traffic volume, congestion, parking, roadway/intersection improvements, pedestrian/bicycle use, transit hub, mass transit (transit hub, trolley, shuttles).
- Visual resources: building height, aesthetics/views from surrounding areas, open space concepts.
- Land use: promotion of high-density and mixed-used concepts, alternative transportation benefits.
- Cultural resources: historic buildings and properties, Old Town State Historic Park, building heights, aesthetics, character of Old Town and other local listed properties.
- Hazardous materials: presence and cleanup of soil and groundwater contamination onsite, development on contaminated properties, hazardous materials/waste.
- Development next steps: agreement with SANDAG, timing/process for redevelopment after the EIS, offsite redevelopment concepts (train/trolley facilities, bus facilities, intersection improvements).
- Coastal resources: coastal zone effects, sea level rise, long-term regional transit improvements, reducing greenhouse gas (GHG) emissions, consistency with the Coastal Zone Management Act.

A notice of availability (NOA) of the Draft EIS was published in the Federal Register on May 14, 2021 to initiate a 60-day public and agency review and comment period. The public comment period runs from May 14, 2021 to July 13, 2021. To ensure the widest possible distribution, the Navy distributed the Draft EIS to government agencies, American Indian tribes, local libraries, members of the public who requested copies. The NOA was published in the same five newspapers as the Notice of Intent. The Draft EIS was also posted on the project website: www.NAVWAR-revitalization.com. Comments received during the Draft EIS public comment period will be considered during preparation of the Final EIS.

The Navy is requesting public and agency comments during the 60-day public and agency review and comment period (May 14, 2021 to July 13, 2021). The Navy will hold two virtual public meetings during the public comment period. Public meetings will present potential impacts from the action alternatives and provide an avenue to receive comments. A summary of the public review process will be included on the project website and in the Final EIS as part of Appendix O.

The Navy will develop the Final EIS based on the public and other agency comments received on the Draft EIS. Where appropriate, EIS sections will be updated to respond to public and other agency comments. The Final EIS will provide decision makers with a comprehensive review of the potential environmental consequences of implementing the action alternatives and will identify the Navy's preferred alternative. A summary of the comments received on the Draft EIS, along with the Navy's responses to these comments, will be included in the Final EIS. Publication of the NOA for the Final EIS will begin a 30-calendar-day waiting period before the Record of Decision (ROD) is signed.

The final step in the NEPA process is the signing of the ROD for the project. The ROD will be signed by the Navy and will identify and explain the Navy's decision, identify alternatives considered, and discuss other considerations influencing the decision. The ROD will also describe efforts to minimize or mitigate the environmental impacts resulting from the Navy's decision.

In addition to the public involvement required by NEPA, the Navy is conducting public outreach to educate, inform, and enable public participation in the Navy's planning efforts. This includes updating the project's public website regularly with key project information, establishing a project information hotline allowing the public to ask questions about the project by phone, publishing a summary of public input received during scoping, holding public meetings and providing briefings to community groups, and regularly interacting with the media to make project information readily available to the public.

The Navy is conducting public outreach to educate, inform, and enable public participation. The Navy has also communicated with agency stakeholders during preparation of this EIS.

The Navy has communicated with agency stakeholders during preparation of this EIS. The Navy is also consulting with the State Historic Preservation Officer and federally recognized tribes under Section 106 of the National Historic Preservation Act for potential effects to properties eligible for listing or listed on the National Register of Historic Places.

The Navy's discussions with agencies contributed to development of the action alternatives and helped to identify potential environmental impact avoidance, minimization, and mitigation measures for the project. The Navy will continue to discuss issues and follow appropriate consultations associated with the Proposed Action Alternatives as the EIS process continues.

2 Proposed Action and Alternatives

This chapter describes the Proposed Action and alternatives considered in this EIS, explains the process used by the Navy to identify and evaluate the reasonable range of alternatives carried forward for detailed analysis, and identifies the best management practices (BMPs) that would be implemented as part of any selected action alternative.

2.1 Proposed Action

The Proposed Action is the modernization of NAVWAR's facilities on OTC through demolition, construction, and renovation of buildings, utilities, and infrastructure.

2.2 Alternatives Development

This section summarizes the major requirements and factors that influenced the development of the action alternatives evaluated in this EIS. Appendix C provides detailed information on the alternatives development process, including details on how the redevelopment potential on OTC was analyzed to determine a reasonable range of alternatives.

2.2.1 OTC Buildout Analysis

The Navy's buildout analysis (Appendix C) used industry standards, best available data, input from public outreach efforts, and professional judgment to define a range of reasonable and feasible redevelopment options for OTC. The resulting alternatives should not be considered exact representations of eventual facility designs or redevelopment details but are meant to provide assumptions for building height limits and construction footprints, mixed-use density targets, infrastructure requirements, construction phasing, and other project characteristics to enable a reasonable analysis of the potential environmental impacts under each action alternative.

The Navy considered the following requirements and input while developing the OTC buildout analysis, and to help define the redevelopment assumptions and thresholds for each action alternative:

- NAVWAR requirements
- Responses to a Navy RFI regarding public-private redevelopment at OTC
- Market analysis to evaluate public-private redevelopment potential on OTC
- City of San Diego development review process
- Federal Aviation Administration (FAA) review
- Public comments received during the scoping period

2.2.1.1 NAVWAR Requirements

The identification and integration of NAVWAR requirements was an essential factor in developing all action alternatives. There are two types of redevelopment scenarios for NAVWAR: Navy redevelopment, including modernization of NAVWAR buildings, and public-private redevelopment, including construction of new NAVWAR buildings, plus construction of additional mixed-use redevelopment on OTC. Both scenarios were based on a NAVWAR review of requirements contained in a formal requirements package prepared in 2020 (Navy, 2020b).

The requirements package documents the space needs for NAVWAR functions on OTC as shown in Table 2-1. The requirements package also identifies some NAVWAR functions that could be relocated from OTC to other locations within the San Diego region.

Table 2-1 Summary of NAVWAR Requirements

NAVWAR Use Category	*NAVWAR Facility Requirements on OTC*
Office	845,326 SF
Laboratory	165,614 SF
Secure Conference Room/Auditorium	29,156 SF
Warehouse/Storage	24,172 SF
Open Storage	N/A
Parking	630,000 SF

Legend: N/A = not applicable; SF = square feet.
Note: Parking square footage equivalent to 2,000 parking stalls.
Source: Navy, 2020b.

2.2.1.2 Responses to the Navy Request for Interest

The Navy issued a RFI in 2018 to evaluate the availability and adequacy of potential business sources to fund NAVWAR facilities and infrastructure by redeveloping OTC through a public-private agreement. The RFI process resulted in 12 responses, four of which contained substantive market research for potential mixed-use redevelopment scenarios. The Navy developed the public-private redevelopment scenarios partly based on the RFI submittals received in January 2019. Of the four responses that contained market research, two developers provided a detailed program for private redevelopment as shown in Table 2-2. The Navy considered these responses as a starting point for developing the buildout of public-private redevelopment alternatives.

Table 2-2 Summary of Responses to Navy Request for Interest

Private Redevelopment	*Response 1*	*Response 2*
Residential	2,000-3,600 units	2,425 units
Office	450,000 SF	987,700 SF
Hotel	250 rooms	480 rooms
Retail	300,000 SF	314,125 SF
Warehouse	275,000 SF	-
Parking	4,500 stalls	-

Legend: - = no data; SF = square feet.
Source: Responses provided to the Navy's RFI, received January 2019.

2.2.1.3 Market Analysis

SANDAG identified OTC as a potential site for consolidation of a transit center and submitted a response to the Navy's RFI. SANDAG later included OTC in the 2019 Airport Connectivity Analysis report as an additional site to consider for a Central Mobility Hub with connectivity to/from the San Diego International Airport. To assess OTC as a potential location for the Central Mobility Hub, SANDAG prepared a Development Opportunity and Market Analysis for OTC with the transit center as a project element. The analysis forecasted future demands for apartment rentals (residential), office space, retail space, and hotels. The analysis report was used in conjunction with the Navy RFI responses to support the Navy's buildout analysis (Appendix C).

Residential Market Analysis

The residential market analysis considered supply and demand based on a primary market area including East Village, Little Italy, and Mission Valley, all of which contain a competitive set of apartment projects. The residential market analysis also included a demand analysis based on SANDAG's Central San Diego, Peninsula, and Mission Valley planning areas. The market analysis projected an unmet future demand in the area of 44,000 residential units by 2040. Comparing the RFI responses with the market analysis projections, the EIS alternatives were developed with a range of residential units between 4,400 and 10,000. This provides a representative range allowing for flexibility in site design and planning.

Office Market Analysis

The office market analysis included a forecast for employment growth from 2020 to 2050 based on SANDAG data. The report provided a county-wide analysis of jobs by sector to determine the number of forecasted new jobs per year. This value was multiplied by 185 square feet per person as an average size for a modern office space. The same analysis was applied to the forecasts for Downtown and Mission Valley as these would be the areas with which potential OTC office redevelopment would compete. The market analysis identified a future unmet demand for office space 1.95 million square feet by 2050. The EIS alternatives were developed with a range of office space between 650,000 and 1,350,000 square feet to allow for flexibility in site design and planning.

Retail Market Analysis

The retail market analysis includes a supply analysis for the County of San Diego, as well as focused studies on Downtown and Mission Valley. The retail market demand analysis for OTC focused on three contributing elements: residents, office workers, and visitor or passenger foot traffic. The analysis resulted in a forecasted range of between 125,000 to 200,000 square feet to serve redevelopment on OTC and the surrounding area. To provide a conservative analysis, the EIS alternatives were developed with a range of retail space between 130,000 and 250,000 square feet.

Hotel Market Analysis

The hotel market analysis focused on two types of hotels: limited service and boutique. For the limited service category, 7 hotels in Mission Valley were used for comparison and for the boutique hotel category, 12 hotels in downtown San Diego were used for comparison. Statistics on number of rooms, available room nights, average daily rates, revenue per available room, and occupancy rates were provided over a 10-year period. Using this analysis, the market analysis recommended one 200-room limited service hotel and one 250-room boutique hotel for a total of 450 hotel rooms. The EIS alternatives consider between one 250-room hotel at 160,000 square feet and two hotels with a total of 450 rooms and 290,000 square feet. This range allows for flexibility in site design and planning.

Parking Requirements

Parking requirements were not addressed in the RFI submittals or in the market analysis. The Navy reviewed the City of San Diego's Municipal Code for input on zoning that is applied to similar non-federal projects and used that information to identify potential parking ratios for each major use category. Parking ratios are further defined in the buildout analysis in Appendix C.

2.2.1.4 City of San Diego Requirements

Currently, OTC is federal property and is therefore not subject to local zoning or development guidelines. Future redevelopment of OTC anticipates the property will remain in federal ownership and the types and intensities of mixed-use redevelopment proposed for analysis in this EIS would be allowable under existing federal law. To the extent property is transferred out of federal ownership, transferees would comply with state and local zoning and planning requirements to the extent required by law.

2.2.1.5 Federal Aviation Administration Review

OTC is located approximately 3,200 feet north of the San Diego International Airport runways and less than 2.5 miles north of Naval Air Station North Island. Redevelopment of OTC over a certain height could impact flight operations at the airport and at the Naval Air Station. Figure 2-1 shows the location of OTC in relation to the San Diego International Airport and the Terminal Instrument Procedures Surfaces that overlie OTC.

One tool used by FAA to evaluate potential hazards is the use of "imaginary surfaces." These surfaces are defined in the Federal Aviation Regulations to either provide a safety or navigation buffer for planes departing or landing on that runway or to create a defined need for FAA review of proposed construction activities. If a proposed vertical structure (e.g., building, crane, cell tower) would pierce an imaginary surface, an obstruction evaluation review process must be conducted by submitting the project to the FAA. For the airspace above OTC, the most stringent requirement from the imaginary surfaces (i.e., lowest height) is the horizontal surface for Runway 9-27 at San Diego International Airport. This flat surface is at 166 feet above mean sea level, about 150 feet above ground level, over OTC. Penetration of this horizontal surface would require FAA review under 14 CFR part 77 Imaginary Surfaces and Hazard Assessment.

Preliminary coordination with San Diego International Airport representatives suggests that FAA's main concern is airport efficiency (R. Redman, San Diego International Airport, personal communication, December 13, 2019). If FAA determines one or more buildings constructed as part of the OTC project would be an obstacle hazard and would require San Diego International Airport to modify the current timing of the north break for departing general aviation flights, there may be a negative impact to San Diego International Airport's overall efficiency and capacity. The Navy has incorporated this information and developed conceptual alternatives that would avoid placing the tallest buildings in the northwestern portion of OTC Site 2 while still providing flexibility in design. The Navy and the San Diego International Airport have and will continue to collaborate on FAA considerations.

2.2.1.6 Public Comments Received During Scoping

The Navy considered all comments received during the scoping period in the development of alternatives. Comments included promotion of mixed-use development, concerns regarding traffic and building heights/views, reductions in air pollution, historic buildings, and hazardous materials or spills from prior uses.

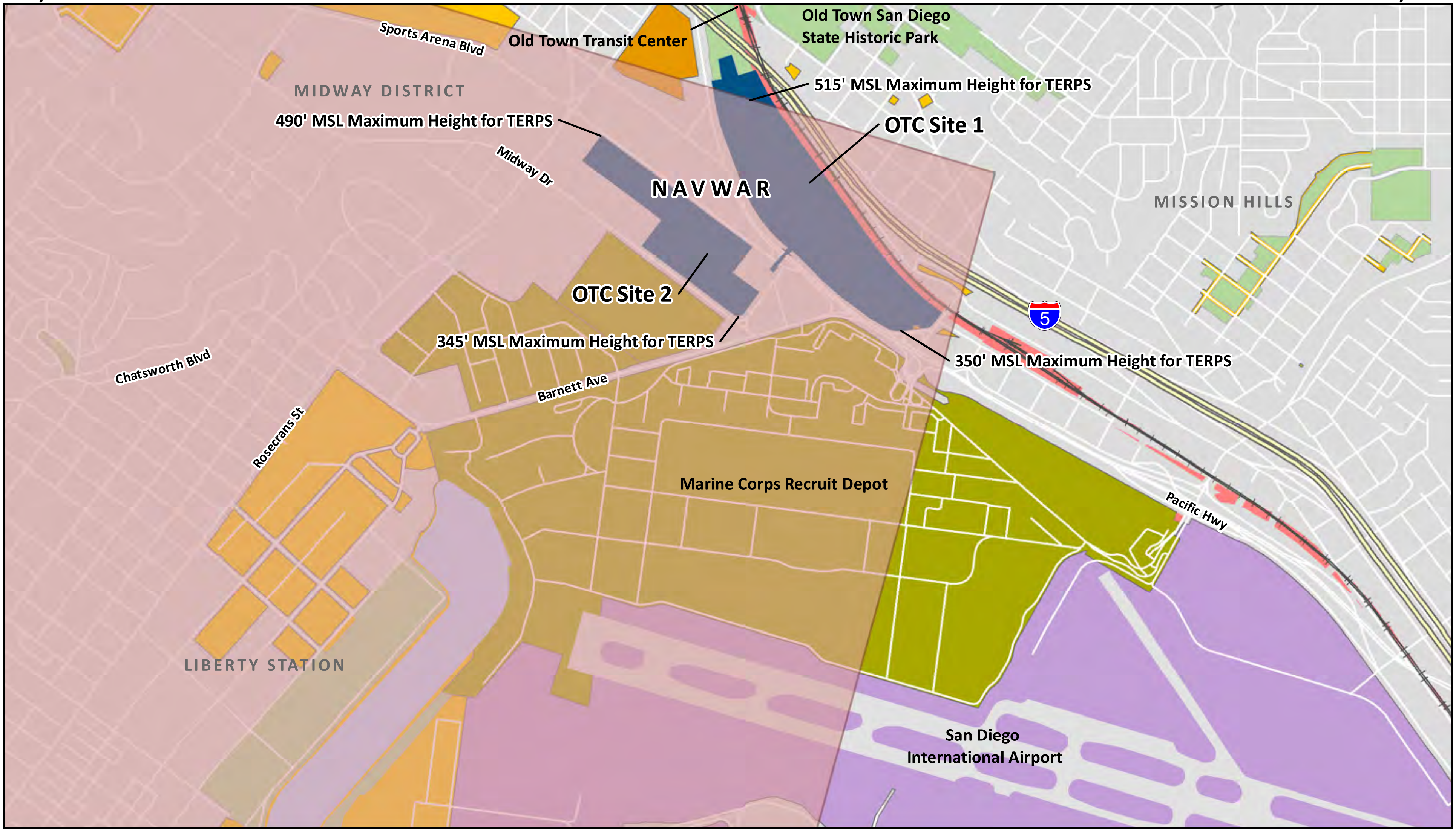


Figure 2-1. Terminal Instrument Procedures Surfaces for San Diego International Airport

2.2.2 Application of Buildout Analysis to Develop Alternatives

The Navy utilized NAVWAR requirements, responses to the RFI, and the SANDAG market analysis to develop the basis for a range of redevelopment densities and uses at OTC for Alternatives 2, 3, 4, and 5.

2.3 Alternatives Carried Forward for Analysis

Through the alternative development process, five action alternatives were identified that meet the purpose and need for the Proposed Action. One action alternative analyzes Navy redevelopment of NAVWAR facilities on OTC, and four action alternatives analyze public-private redevelopment with a reduced NAVWAR footprint and a range of new mixed-uses on the remainder of OTC. Two of the action alternatives include consolidation of a transit center on OTC. In addition to the No Action Alternative, the following five action alternatives are analyzed in this EIS:

- Alternative 1: NAVWAR-Only Redevelopment
- Alternative 2: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use
- Alternative 3: Public-Private Redevelopment–NAVWAR and Lower Density Mixed Use
- Alternative 4: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use with a Transit Center
- Alternative 5: Public-Private Redevelopment–NAVWAR and Lower Density Mixed Use with a Transit Center

2.3.1 Description of Alternatives

The Navy identified five action alternatives that meet the purpose and need for the Proposed Action. Because it, Alternative 1 redevelopment involves only NAVWAR uses and would not introduce public-private development. Alternative 1 retains components such as warehouse and open storage at OTC that would be inefficient with public-private development. This is represented by the facility requirements on OTC, a total of 3,307,008 square feet.

Alternatives 2, 3, 4, and 5 include redevelopment of OTC with a NAVWAR footprint that does not include warehouse and open storage but does add new public-private redevelopment uses and densities. For Alternatives 2 through 5, NAVWAR's warehouse and open storage functions would be relocated to existing facilities within the San Diego region. This would result in a NAVWAR space requirement for Alternatives 2 through 5 to a total of 1,694,268 square feet.

This EIS does not address the potential offsite relocation of NAVWAR functions. The Navy anticipates accommodating the open storage/laydown and warehouse functions into existing facilities in the San Diego region. These locations have yet to be determined. If the Navy determines that these functions cannot be accommodated into existing facilities, the Navy will investigate other alternatives including construction of new facilities or addition to existing facilities. Under all scenarios, the Navy would conduct any necessary environmental reviews prior to taking action.

For the public-private Alternatives 2, 3, 4, and 5, the Navy prepared site-specific estimates for the number, size, and uses of buildings. The assumptions were developed to allow technical evaluation and environmental impact review between alternatives. The alternatives are summarized in Table 2-3 and explained in more detail in the following sections.

Table 2-3 Alternatives Summary Matrix

Development Type	*Alternative 1[1] (NAVWAR-Only Redevelopment)*	*Alternative 2 – Public-Private Development – NAVWAR and Higher Density Mixed Use*	*Alternative 3 – Public-Private Development – NAVWAR and Lower Density Mixed Use*	*Alternative 4 – Public-Private Development – NAVWAR and Higher Density Mixed Use with Transit Center*	*Alternative 5 – Public-Private Development – NAVWAR and Lower Density Mixed Use with Transit Center*
NAVWAR Redevelopment	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**
Office	1,019,364	845,326	845,326	845,326	845,326
Laboratory	174,865	165,614	165,614	165,614	165,614
Secure Conference/Auditorium	26,156	29,156	29,156	29,156	29,156
Warehouse/Storage	481,941	24,172	24,172	24,172	24,172
Open Storage	174,267	Not applicable	Not applicable	Not applicable	Not applicable
Parking	1,430,415 (4,541 stalls)	630,000 (2,000 stalls)	630,000 (2,000 stalls)	630,000 (2,000 stalls)	630,000 (2,000 stalls)
NAVWAR Redevelopment Total	**3,307,008**	**1,694,268**	**1,694,268**	**1,694,268**	**1,694,268**
Mixed-Use Development	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**
Residential	Not applicable	6,336,000 (6,600 units)	4,224,000 (4,400 units)	9,600,000 (10,000 units)	7,680,000 (8,000 units)
Residential-Parking	Not applicable	3,326,400 (9,504 stalls)	2,217,600 (6,336 stalls)	5,040,000 (14,400 stalls)	4,032,000 (11,520 stalls)
Office	Not applicable	1,000,000	650,000	1,350,000	850,000
Office-Parking	Not applicable	525,000 (1,500 stalls)	341,250 (975 stalls)	708,750 (2,025 stalls)	446,250 (1,275 stalls)
Hotel	Not applicable	260,000 (2 hotels, 400 rooms)	160,000 (1 hotel, 250 rooms)	290,000 (2 hotels, 450 rooms)	290,000 (2 hotels, 450 rooms)
Hotel-Parking	Not applicable	140,000 (400 stalls)	87,500 (250 stalls)	157,500 (450 stalls)	157,500 (450 stalls)
Retail	Not applicable	180,000	130,000	250,000	200,000

Development Type	*Alternative 1(1) (NAVWAR-Only Redevelopment)*	*Alternative 2 – Public-Private Development – NAVWAR and Higher Density Mixed Use*	*Alternative 3 – Public-Private Development – NAVWAR and Lower Density Mixed Use*	*Alternative 4 – Public-Private Development – NAVWAR and Higher Density Mixed Use with Transit Center*	*Alternative 5 – Public-Private Development – NAVWAR and Lower Density Mixed Use with Transit Center*
Retail-Parking	Not applicable	132,300 (378 stalls)	95,550 (273 stalls)	183,750 (525 stalls)	147,000 (420 stalls)
Transit Center	Not applicable	Not applicable	Not applicable	140,000	140,000
Transit Center-Parking	Not applicable	Not applicable	Not applicable	175,000 (500 stalls)	175,000 (500 stalls)
New Mixed-Use Development Total	Not applicable	**11,899,700**	**7,905,900**	**17,895,000**	**14,117,750**
GRAND TOTAL	**3,307,008**	**13,593,968**	**9,600,168**	**19,589,268**	**15,812,018**

Notes: (1) Alternative 1 represents requirements identified by NAVWAR through a basic facility requirements document.

2.3.1.1 Building Types

Alternative 1 would utilize existing buildings and provide upgrades to current codes and security requirements. For Alternatives 2 through 5, the Navy estimated a mix of building types and projected building locations and heights to satisfy each development density. The Navy used findings from the market analysis as well as City of San Diego Development Guidance and FAA review to inform the site layout design. The layout was developed using the best available information and professional judgment to represent a range of development densities on OTC. The mix of building types used to develop site layouts for each alternative are shown in Table 2-4.

Table 2-4 Building Types

Building Type	***Representative Size***
low-rise	1-2 Floors Up to 30 feet tall
low- to mid-rise	3-8 Floors 31 – 89 feet tall
mid-rise	9-21 Floors 90-240 feet tall
high-rise	22+ Floors Greater than 240 feet tall

2.3.1.2 Proposed Construction Timeline

Redevelopment of OTC under a Navy-only redevelopment scenario (Alternative 1) is proposed to be implemented over a 5-year period. The exact start date of this redevelopment would depend on the availability of Navy funds. Redevelopment of the OTC property through public-private development is proposed to be implemented over a 25-year period, through a phased development approach. The intent would be to redevelop the property in stages with flexibility to accommodate market conditions. In all cases, construction of the NAVWAR requirements is assumed to be initiated first and completed over a period of 5 years. Phasing of the remaining site development would be based on a variety of development and real estate factors, but for purposes of this EIS is assumed to occur over a 25-year period. In general, the EIS team assumed 25 percent of all uses (residential, commercial, retail and hotel) would be developed by year 10, 45 percent by year 15, 65 percent by year 20, 85 percent by year 25, and full buildout accomplished by year 30. The proposed construction timeline is show on Figure 2-2. Estimated square feet of construction in place over time is shown in Table 2-5.

The NAVWAR facilities would be constructed to applicable Department of Defense (DoD) Design Criteria, including applicable United Facilities Criteria (UFC). Construction would also include appropriate seismic design, low impact development features to minimize stormwater runoff, and sustainable green building certification under Leadership in Energy and Environmental Design guidelines.

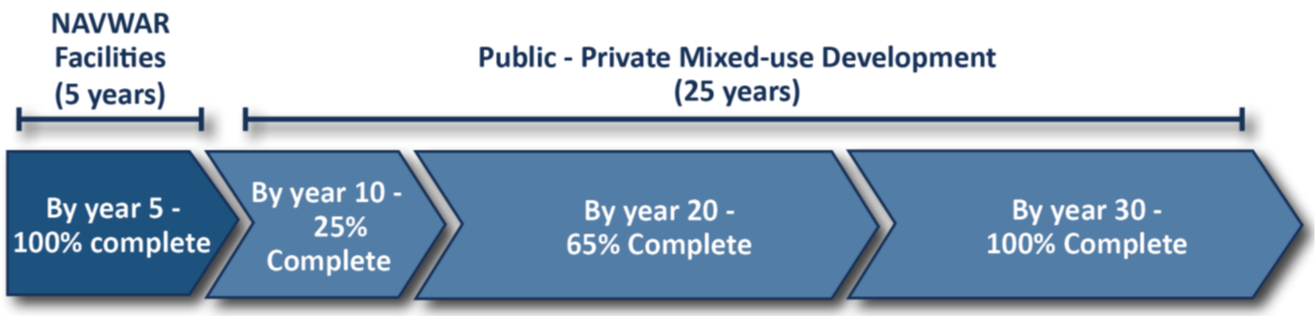


Figure 2-2 Proposed Construction Timeline

Table 2-5 Estimated Square Feet of Development in Place (including parking) During Construction

Development Land Use	*Year 10 25%*	*Year 15 45%*	*Year 20 65%*	*Year 25 85%*	*Year 30 100%*
Alternative 1: NAVWAR-Only Redevelopment	-	-	-	-	-
NAVWAR	3,307,008	-	-	-	-
Alternative 2: Public-Private Development – NAVWAR and Higher Density Mixed Use	-	-	-	-	-
NAVWAR	1,694,268	-	-	-	-
Residential	2,415,600 ~1,650 Units	4,348,080 ~2,970 Units	6,280,560 ~4,290 Units	8,213,040 ~5,610 Units	9,662,400 6,600 Units
Office	381,250	686,250	991,250	1,296,250	1,525,000
Two Hotels			200,000		400,000
Retail	78,075	140,535	202,995	265,455	312,300
Alternative 3: Public-Private Development – NAVWAR and Lower Density Mixed Use	-	-	-	-	-
NAVWAR	1,694,268	-	-	-	-
Residential	1,610,400 ~1,100 Units	2,898,720 ~1,980 Units	4,187,040 ~2,860 Units	5,475,360 ~3,740 Units	6,441,600 4,400 Units
Office	247,813	446,063	644,313	842,563	991,250
One Hotel			247,500		
Retail	56,388	101,498	146,608	191,718	225,550
Alternative 4: Public-Private Development – NAVWAR and Higher Density Mixed Use with a Transit Center	-	-	-	-	-
NAVWAR	1,694,268	-	-	-	-
Residential	3,660,000 ~2,500 Units	6,588,000 ~4,500 Units	9,516,000 ~6,500 Units	12,444,000 ~8,500 Units	14,640,000 10,000 Units
Office	514,688	926,438	1,338,188	1,749,938	2,058,750
Two Hotels			223,750		447,500
Retail	108,438	195,188	281,938	368,688	433,750
Transit Center	157,000	315,000	-	-	-

Development Land Use	*Year 10 25%*	*Year 15 45%*	*Year 20 65%*	*Year 25 85%*	*Year 30 100%*
Alternative 5: Public-Private Development – NAVWAR and Lower Density Mixed Use with a Transit Center	-	-	-	-	-
NAVWAR	1,694,268	-	-	-	-
Residential	2,928,000 ~2,000 Units	5,270,400 ~3,600 Units	7,612,800 ~5,200 Units	9,955,200 ~6,800 Units	11,712,000 8,000 Units
Office	324,063	583,313	842,563	1,101,813	1,296,250
Two Hotels			223,750		447,500
Retail	86,750	156,150	225,550	294,950	347,000
Transit Center	157,000	315,000	-	-	-

Notes: - = no data, ~ = approximately.

2.3.2 No Action Alternative

Under the No Action Alternative, modernization of NAVWAR facilities requirements would not occur and NAVWAR would continue to operate in existing facilities. No change from existing conditions would occur and the Navy would continue to maintain the existing facilities. The No Action Alternative would not meet the purpose of the Proposed Action as it would not provide modern facilities and would not enhance NAVWAR's operational and sustainment effectiveness. It also would not address the need to enable NAVWAR to meet its operational and mission sustainment requirements. Despite this, and as required by NEPA, the No Action Alternative is carried forward for analysis in this EIS.

2.3.3 Alternative 1: NAVWAR-Only Redevelopment

Alternative 1 would include Navy-only redevelopment of OTC. Facilities would be redeveloped by phasing construction projects to minimize impacts on the NAVWAR mission. This alternative does not involve mixed-use development or a transit center on OTC. NAVWAR operations would be consolidated into two of the existing 310,000 square-foot buildings on OTC Site 1. The existing warehouse and parking area on OTC Site 2 would not be moved under this alternative. No additional demolition or construction would occur on OTC Site 2. This alternative would equal the current and future NAVWAR mission requirements of 3,307,008 square feet (Table 2-6).

Table 2-6 Alternative 1 Redevelopment Details

Redevelopment Details	*Alternative 1*
NAVWAR-Only Redevelopment	**Total Square Feet (Equivalent Unit)**
Office	1,019,364
Laboratory	174,865
Secure Conference/Auditorium	26,156
Warehouse/Storage	481,941
Open Storage	174,267
Parking	1,430,415 - (4,541 stalls)
GRAND TOTAL	**3,307,008**

This alternative would require significant renovations to the exterior and interior of OTC Site 1 buildings to meet seismic requirements, abate hazardous materials, and upgrade utility systems to meet NAVWAR's mission requirements.

This alternative would preserve the existing exterior of two of the warehouse buildings currently located on OTC Site 1. Current building heights would be maintained. The tallest building height would be approximately 55 feet. Because specific site layouts and building design are not known at this time, a general representation of renovation is shown in Figure 2-3.

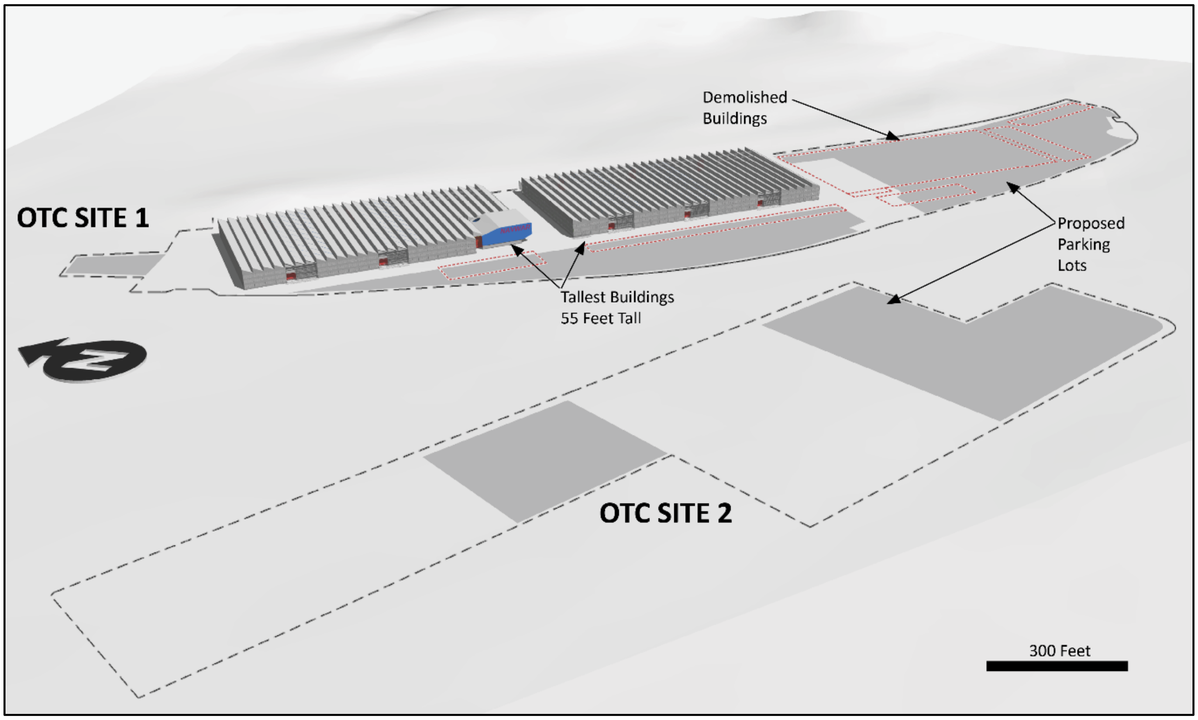


Figure 2-3 Estimated Buildout for Alternative 1 on OTC Site 1

Onsite utilities would be repaired or upgraded to meet NAVWAR's current and future requirements. The renovations would occur in eight phases (four phases to complete each building) and would take approximately 5 years. Other obsolete facilities and utilities on OTC Site 1 would be demolished once the renovations to Buildings 2 and 3 were completed and NAVWAR operations relocated to the renovated buildings.

Security and antiterrorism force protection upgrades would be included under this alternative, including upgrades to the entry control point and circulation improvements. A secure fence would be constructed around the two renovated buildings, and the entry control point would be improved and moved just south of the southeastern corner of Building 2. An additional truck inspection area and gate would be added to the east of Building 2. Building 1 would be demolished and a parking lot with 1,500 spaces would be constructed in its place. The parking area would be located outside of the new secure facility fence line.

2.3.4 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Alternative 2 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage with a combination of mixed-use residential, office, hotel, and retail space. Alternative 2 would include demolition and construction of utilities, facilities, and infrastructure through a public-private development agreement.

Under Alternative 2, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 11,899,700 square feet of new private mixed-use development for a total of 13,593,968 square feet of development.

Public-private development would include 6,600 residential units, 1,000,000 square feet of office space, 2 hotels, and 180,000 square feet of retail. Retail could include restaurants and other retail shopping uses. Table 2-7 presents details of the development assumptions for Alternative 2.

Table 2-7 Alternative 2 Development Details

Development Details	*Alternative 2*
NAVWAR Development	**Total Square Feet (Equivalent Unit)**
Office	845,326
Laboratory	165,614
Secure Conference/Auditorium	29,156
Warehouse/Storage	24,172
Open Storage	Not applicable
Parking	630,000 (2,000 stalls)
NAVWAR Redevelopment Total	**1,694,268**
Public-Private Development – Higher Density	**Total Square Feet (Equivalent Unit)**
Residential	6,336,000 - (6,600 units)
Residential-Parking	3,326,400 - (9,504 stalls)
Office	1,000,000
Office-Parking	525,000 - (1,500 stalls)
Hotel	260,000 - (2 hotels, 400 rooms)
Hotel-Parking	140,000 - (400 stalls)
Retail	180,000
Retail-Parking	132,300 - (378 stalls)
Transit Center	Not applicable
Transit Center-Parking	Not applicable
Public-Private Development Total	**11,899,700**
GRAND TOTAL	**13,593,968**

Alternative 2 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure 2-4. In general, Alternative 2 would include construction of approximately 91 buildings including 6 standalone parking structures. The tallest buildings under Alternative 2 would be approximately 240 feet.

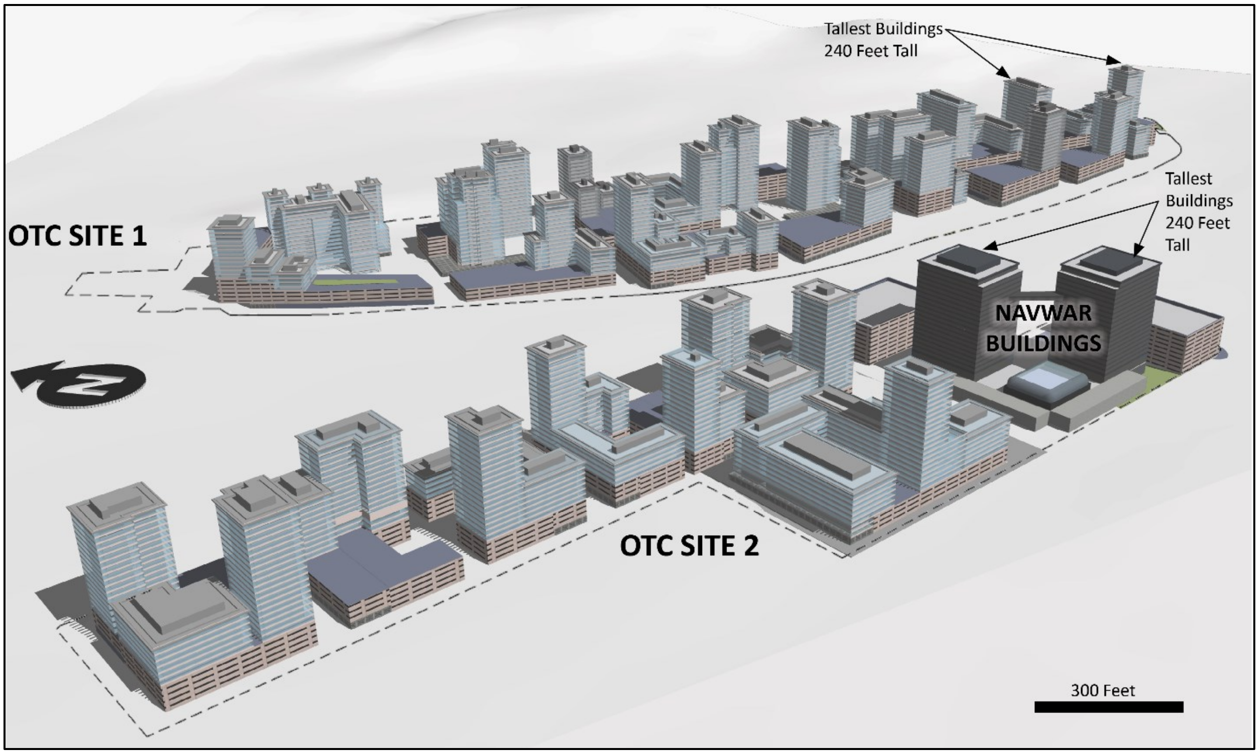


Figure 2-4 Representative Development for Alternative 2

2.3.4.1 OTC Site 1

OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

2.3.4.2 OTC Site 2

NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

2.3.4.3 Summary

Alternative 2 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 2 represents a higher intensity of new public-private development on OTC Site 1 and OTC Site 2, without the development of a transit center.

2.3.5 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Alternative 3 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage with a combination of a lower density of mixed-use residential, office, hotel, and retail space. Alternative 3 would include demolition and construction of utilities, facilities, and infrastructure via a public-private development agreement.

Under Alternative 3, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 7,905,900 square feet of new private mixed-use development for a total of 9,600,168 square feet of development.

Public-private development would include 4,400 residential units, 650,000 square feet of office space, 2 hotels, and 130,000 square feet of retail. Retail could include restaurants and other retail shopping uses. Table 2-8 presents details of the development assumptions for Alternative 3.

Table 2-8 Alternative 3 Development Details

Development Details	***Alternative 3***
NAVWAR Redevelopment	**Total Square Feet (Equivalent Unit)**
Office	845,326
Laboratory	165,614
Secure Conference/Auditorium	29,156
Warehouse/Storage	24,172
Open Storage	Not applicable
Parking	630,000 - (2,000 stalls)
NAVWAR Redevelopment Total	**1,694,268**
Public-Private Development – Lower Density	**Total Square Feet (Equivalent Unit)**
Residential	4,224,000 - (4,400 units)
Residential-Parking	2,217,600 - (6,336 stalls)
Office	650,000
Office-Parking	341,250 - (975 stalls)
Hotel	160,000 - (1 hotel, 250 rooms)
Hotel-Parking	87,500 - (250 stalls)
Retail	130,000
Retail-Parking	95,550 - (273 stalls)
Transit Center	Not applicable
Transit Center-Parking	Not applicable
Public-Private Development Total	**7,905,900**
GRAND TOTAL	**9,600,168**

Alternative 3 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure 2-5. In general, Alternative 3 would include construction of approximately 106 buildings including 11 standalone parking structures. The tallest buildings under Alternative 2 would be approximately 240 feet.

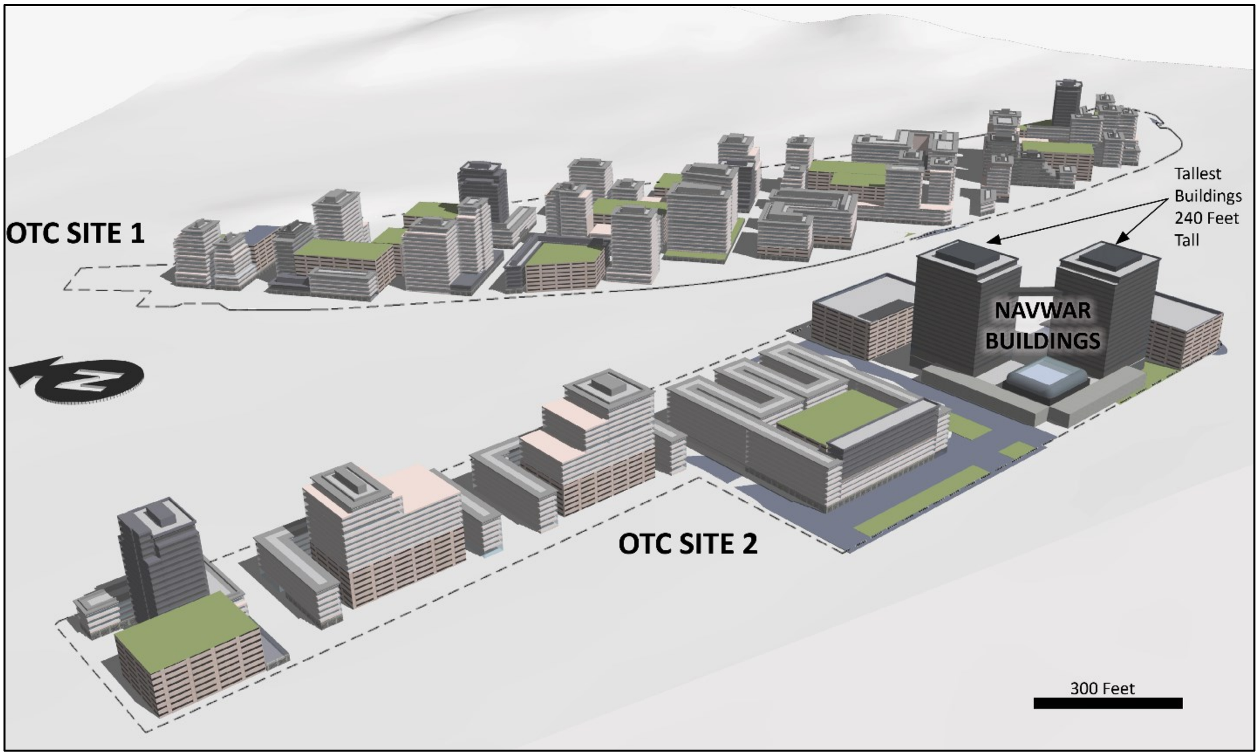


Figure 2-5 Representative Development for Alternative 3

2.3.5.1 OTC Site 1

OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

2.3.5.2 OTC Site 2

NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access, and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

2.3.5.3 Summary

Alternative 3 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 3 represents a lower intensity of new public-private development on OTC Site 1 and OTC Site 2 that does not include the development of a transit center.

2.3.6 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with Transit Center

Alternative 4 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage with a higher density of mixed-use residential, office, hotel, and retail space and a transit center. Alternative 4 would include demolition and construction of utilities, facilities, and infrastructure via a public-private development agreement.

Under Alternative 4, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 17,895,000 square feet of new private mixed-use development for a total of 19,589,268 square feet of development.

Public-private development would include 10,000 residential units, 1,350,000 square feet of office space, 2 hotels, and 250,000 square feet of retail. Retail could include restaurants and other retail shopping uses. In addition, this alternative includes the construction of an onsite transit facility on OTC Site 1. Table 2-9 presents details of the development assumptions for Alternative 4.

Table 2-9 Alternative 4 Development Details

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

Alternative 4 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure 2-6. In general, Alternative 4 would include construction of approximately 109 buildings including 2 standalone parking structures. The tallest buildings under Alternative 4 would be approximately 350 feet.

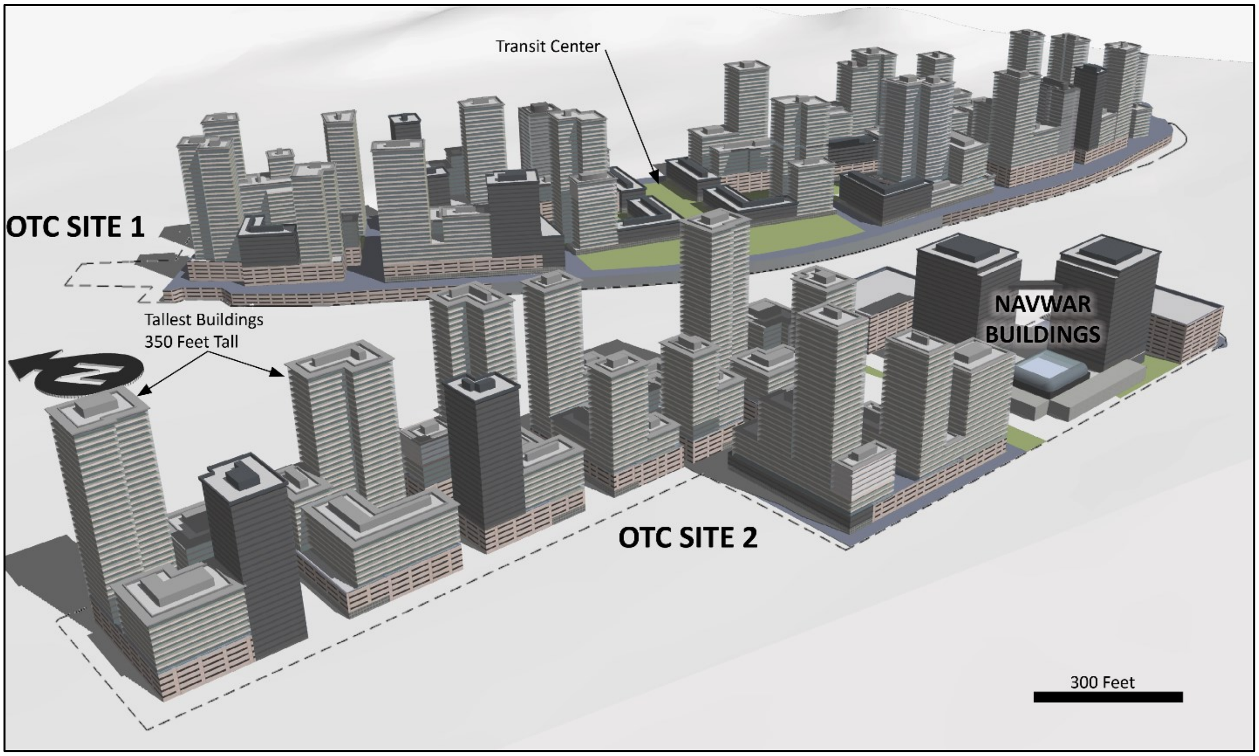


Figure 2-6 Representative Development for Alternative 4

2.3.6.1 OTC Site 1

OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings. OTC Site 1 would also include a transit center.

2.3.6.2 OTC Site 2

NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

2.3.6.3 Summary

Alternative 4 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 4 represents a higher intensity of new public-private development on OTC Site 1 and OTC Site 2, including development of a transit center.

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

Alternative 5 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage with a combination of a lower density of mixed-use residential, office, hotel, and retail space, and a transit center. Alternative 5 would include demolition and construction of utilities, facilities, and infrastructure through a public-private development agreement.

Under Alternative 5, all existing facilities would be demolished. This alternative would include the reduced development requirement of 1,694,268 square feet for NAVWAR and 14,117,750 square feet of new mixed-use development for a total of 15,812,018 square feet of development.

Public-private development would include 8,000 residential units, 850,000 square feet of office space, two hotels, and 200,000 square feet of retail. Retail could include restaurants and other retail shopping uses. In addition, this alternative includes the construction of an onsite transit facility on OTC Site 1. Table 2-10 presents details of the development assumptions for Alternative 5.

Table 2-10 Alternative 5 Development Details

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

Alternative 5 would develop both OTC Site 1 and OTC Site 2. Because specific site layouts and building design are not known at this time, a general representation of development is shown in Figure 2-7. In general, Alternative 5 would include construction of approximately 107 buildings including 2 standalone parking structures. The tallest buildings under Alternative 2 would be approximately 350 feet.

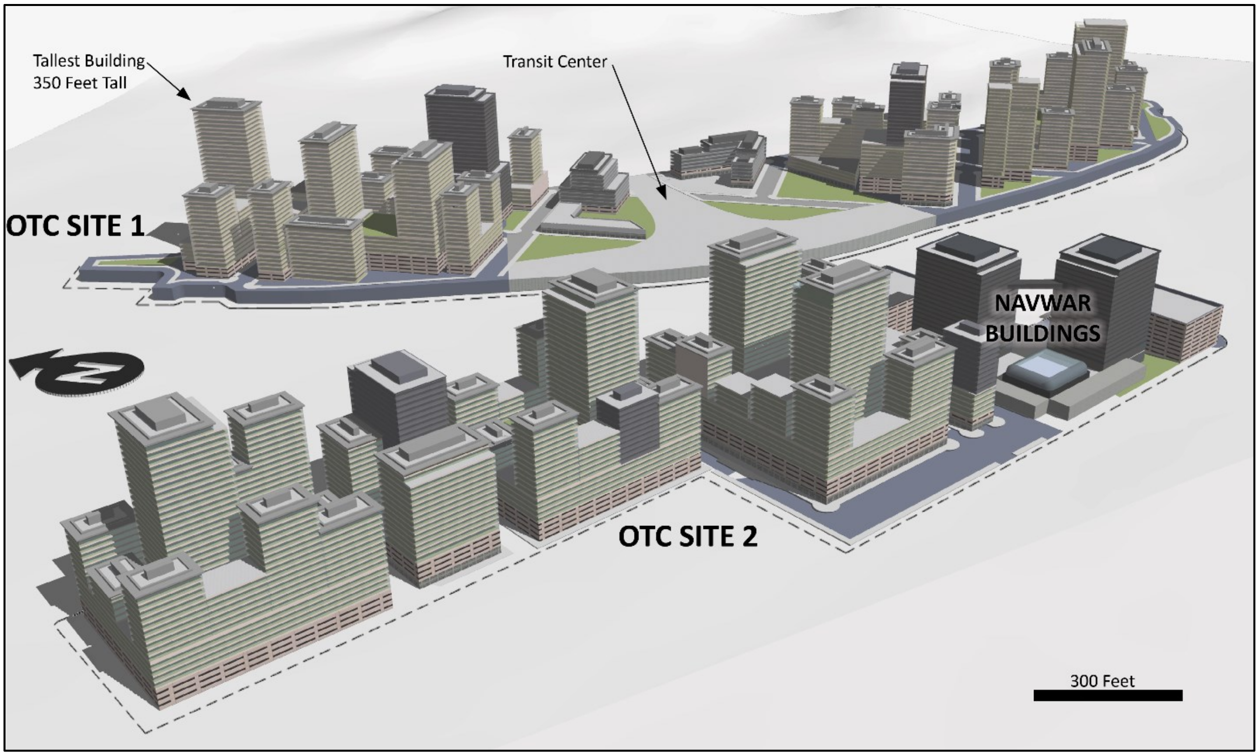


Figure 2-7 Representative Development for Alternative 5

2.3.7.1 OTC Site 1

OTC Site 1 would include parking integrated into each building development with a few standalone parking structures. No NAVWAR facilities would be located on OTC Site 1 and all development would be new public-private development. The new public-private development would be a mix of residential, office, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings. OTC Site 1 would also include the transit center.

2.3.7.2 OTC Site 2

NAVWAR would occupy five buildings on OTC Site 2, including two low-rise buildings, one mid-rise building and two mid-high-rise buildings. NAVWAR would also occupy two standalone parking structures on OTC Site 2. The NAVWAR facilities would be constructed with appropriate security requirements such as stand-off distances, controlled access and independent utility systems. The remainder of OTC Site 2 would be developed with a mix of residential, office, and retail space. In general, retail space would be located on the ground floor of some residential and office buildings.

2.3.7.3 Summary

Alternative 5 would provide modernized facilities for NAVWAR on OTC Site 2. Alternative 5 represents a lower intensity of new public-private development on OTC Site 1 and OTC Site 2, including development of a transit center.

2.4 Alternatives Considered but Not Carried Forward for Analysis

Two action alternatives were considered but not carried forward for detailed analysis.

2.4.1 Relocation to an Active Base

This alternative would involve the Navy moving NAVWAR's operations to an active military base in the San Diego region. The Navy evaluated available facilities or unused land area on existing installations that could potentially accommodate their mission. Currently, no active base in the region has sufficient unused facilities, land area, and supporting infrastructure to support the facility requirements unique to the NAVWAR mission. Therefore, this alternative would not meet NAVWAR facility requirements (Table 2-1) and is not carried forward for detailed analysis in this EIS.

2.4.2 Excess or Surplus of the OTC Property

This alternative would involve the Navy declaring all or a portion of the OTC property as excess or surplus. A declaration of excess means the property is no longer needed by the Navy and is offered to other federal agencies. If no federal agencies accept the property, the land could be identified as surplus. A declaration of surplus means the property is no longer needed by the federal government and could be offered for transfer out of federal ownership. With no active base in the region capable of supporting the full NAVWAR requirement, all of the OTC property is needed to meet mission requirements. All of the property would be used in both redevelopment scenarios (Navy-only funded and funding Navy facilities through mixed-use redevelopment). Therefore, using all or a portion of the OTC site for other federal or surplus uses would not meet NAVWAR mission requirements.

2.5 Best Management Practices Included in Proposed Action Alternatives

This section presents an overview of the BMPs that would be incorporated into each action alternative in this EIS. BMPs are existing policies, practices, and measures that the Navy would adopt to reduce the environmental impacts of designated activities, functions, or processes. Although BMPs may minimize or reduce impacts, BMPs are distinguished from potential mitigation measures because BMPs are (1) existing requirements for the Proposed Action Alternatives, (2) ongoing, regularly occurring practices, or (3) not unique to this Proposed Action Alternatives. In other words, the BMPs identified in this document are inherently part of the Proposed Action Alternatives and are not potential environmental impact avoidance, minimization, or mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action Alternatives. Table 2-11 includes a list of BMPs that would be applicable to any action alternative. Environmental impact avoidance, minimization, and mitigation measures are discussed separately in Chapter 3.

Table 2-11 Best Management Practices

BMP	*Description*	*Impacts Reduced/Avoided*
AQ MGMT-1	*Fugitive Dust Control Plan.* Prior to the start of construction, the Navy would prepare a detailed Fugitive Dust Control Plan to ensure compliance with SDAPCD Rules 51 (Nuisance) and 55 (Fugitive Dust Control) (SDAPCD, 2020a). The plan would incorporate the following measures: • Watering: During conditions of dry soil, use water spray/mists to minimize dust emissions generated from earthmoving, grading, bulk material handling, and demolition activities and from the movement of vehicles on unpaved surfaces. When necessary due to dry conditions, apply water at the end of the work day to areas of soils disturbed during the day. • Speed Limits: Limit haul truck speeds to 10 miles per hour on any unpaved surface and 15 miles per hour on any paved surface. Post signs throughout the site to remind equipment operators and truck drivers of the speed limits. • Inactive Areas: Once earthmoving/grading activities are complete in an area, stabilize disturbed soils in these areas within 5 working days with a non-toxic soil stabilizer or soil wetting agent. Prohibit vehicles from operating on these completed areas. • Unpaved Roads: Cover unpaved roads with a non-toxic soil stabilizer or soil wetting agent. Consider covering unpaved roads with a low-silt-content material such as recycled road base or gravel to a minimum of 4 inches. • Material Loading: Load materials carefully to minimize the potential for spills or dust creation. Minimize drop height from loader bucket. Implement water spraying as needed to suppress potential dust generation during loading operations. Take care to apply dust suppression water to the top of the load or source material to avoid wetting the truck tires. Do not perform loading during unfavorable weather conditions such as high winds or rain. Remove visible soil material from trucks before they leave loading areas to prevent tracking soil out. • Track-out Prevention - To prevent soil haul trucks from tracking soil onto public roads, use at least one of the following measures at each vehicle egress from onsite unpaved surfaces to onsite paved roads or public roads: ○ Install a pad consisting of washed gravel (minimum size of 1 inch) that is maintained in a clean condition to a depth of at least 6 inches and extending at least 30 feet wide and at least 50 feet long. ○ Pave the surface at least 100 feet long and at least 20 feet wide. ○ Use a wheel shaker/wheel spreading device, also known as a rumble grate, consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and at a sufficient width to allow all wheels of vehicle traffic to travel over grate to remove bulk material from tires and vehicle undercarriages before vehicles exit unpaved surfaces.	Reduces criteria pollutants (PM_{10}, $PM_{2.5}$)

BMP	***Description***	***Impacts Reduced/Avoided***

	o Install and use a wheel-washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit unpaved surfaces.
	    o Any other control measure or device that prevents track-out onto public roads.
	• Material Hauling: Use properly secured tarps that cover the entire surface area of truck loads. Maintain a minimum of 6 inches of freeboard or water, or otherwise treat the bulk material to minimize loss of material to wind or spillage.
	• Soil Storage Piles: Implement at least one of the following measures:
	    o Enclose material in a three- or four-sided barrier equal to the height of the material.
	    o Apply water at a sufficient quantity and frequency to prevent wind-driven dust.
	    o Apply a non-toxic dust suppressant that complies with air and water quality agency standards at a sufficient quantity and frequency to prevent wind-driven dust.
	    o Install and anchor tarps or plastic over the material.
	    o Use surface crusting agents on inactive storage piles.
	• Paved Roads: Use a street sweeper at least twice per day to remove silt from onsite, paved roads traveled by haul trucks. Remove all track-out at the conclusion of each workday.
	• Windblown Dust: To avoid fugitive dust during high wind conditions, cease soil disturbance activities if onsite wind speeds exceed 25 miles per hour for at least 5 minutes in an hour.
	• Monitoring: Designate a person to monitor the dust control program and increase control measures, as necessary, to minimize the generation of dust. This responsibility would extend to after-work hours.
	Public Notification: Post a publicly visible sign with the telephone number and person to contact regarding dust complaints.	

AQ MGMT-2	*Demolition Plan.* Prior to the start of demolition, the Navy would prepare a detailed demolition plan that complies with SDAPCD Rule 1206 (Asbestos) (SDAPCD, 2020a). The plan would include the following elements: • Identify measures to break up, reuse to the maximum extent practical, and haul away demolition debris. • Describe dust control best practices that would be used. • Identify debris truck haul routes. • Discuss abatement measures for handling and disposing of asbestos-containing building materials and contaminated soil.	Reduces criteria pollutants (PM_{10}, $PM_{2.5}$) and HAPs (asbestos, lead)
AQ MGMT-3	*Tier 4 Construction Equipment.* All off-road diesel-powered construction equipment greater than 50 horsepower would meet USEPA Nonroad Final Tier 4 emission standards.	Reduces criteria pollutants and HAPs

BMP	*Description*	*Impacts Reduced/Avoided*
AQ MGMT-4	*Idling Limits.* Engine idling of any diesel-powered on-road and off-road equipment during construction would not exceed 5 minutes at any location, except as provided in exceptions to the applicable regulations adopted by CARB regarding idling for such equipment. The contractor would post legible and visible signs in English and Spanish, in designated queuing areas and at the construction site, to remind equipment operators of the five-minute idling limit. The contractor would conduct unscheduled inspections to ensure compliance with these measures.	Reduces criteria pollutants, HAPs, and GHGs.
AQ MGMT-5	*Architectural Coating Limits.* The contractor would limit the quantity of architectural coatings applied during construction so that VOC would not exceed 119 pounds per day in the applied coatings. At the current SDAPCD VOC limit of 50 grams per liter for general flat coatings (SDAPCD Rule 67.0.1 [Architectural Coatings] [SDAPCD, 2020a]), this measure equates to a daily limit of 285 gallons of coatings per day. The daily limit for other coatings would be determined using the following formula: quantity of coating (gallons per day) = 285 x 50/(VOC content of other coatings in grams per liter).	Reduces maximum daily criteria pollutants (VOC)
AQ MGMT-6	*Engine Maintenance.* The construction contractor would maintain and tune engines per manufacturer's specifications to perform at CARB and/or USEPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-7	*Alternative Fuels (Construction).* The construction contractor shall use alternative fueled and electric construction equipment where feasible.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-8	*Low Emission Building Materials.* Where feasible, the construction contractor would select low-emitting adhesives, paints, coatings, carpet systems, composite wood, agri-fiber products, and others.	To Reduces criteria pollutants (VOC) and HAPs
AQ MGMT-9	*Cool Roofs.* Building construction would include either (1) roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under the 2019 or newer California Green Building Standards Code (California Building Standards Commission, 2020) or (2) a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under the 2019 or newer California Green Building Standards Code.	Reduces GHGs
AQ MGMT-10	*LEED.* Building construction would achieve LEED Version 4 certification of at least silver through the U.S. Green Building Council (U.S. Green Building Council, 2021). LEED certification is based on standards that encourage the development of energy-efficient and sustainable buildings.	Reduces GHGs
AQ MGMT-11	*Solar Energy.* The project would maximize the use of solar energy through installation of photovoltaic panels, solar water heating systems, or other technologies.	Reduces GHGs
AQ MGMT-12	*Tier 4 Operational Equipment.* All off-road diesel-powered equipment greater than 50 horsepower used for operations would meet USEPA Nonroad Final Tier 4 emission standards.	Reduces criteria pollutants and HAPs
AQ MGMT-13	*Refrigerant Management Plan.* Prior to the initiation of operations, the Navy would prepare a refrigerant management plan for purposes of ensuring compliance of refrigerant usages with USEPA (40 CFR part 82,	Reduces GHGs

BMP	***Description***	***Impacts Reduced/Avoided***
	Subpart F) and CARB (Refrigeration Management Program [CARB, 2010]) regulations and minimizing GHG emissions of refrigerants from future development.	
AQ MGMT-14	*Sustainable Landscape Design.* The project would incorporate sustainable landscape design where feasible, including: • Plant trees to provide shade and CO_2 absorption • Use drought-tolerant native vegetation • Reduce use of lawn types that require high levels of irrigation • Use high-efficiency irrigation technology or recycled site water • Design buildings to capture and store rainwater for landscape irrigation	Reduces GHGs
AQ MGMT-15	*Air Filtration.* Building construction would include installation of high-efficiency particulate air filters on residential buildings within 500 feet of Interstate 5.	Reduces exposure to criteria pollutants (PM_{10}, $PM_{2.5}$) and HAPs
AQ MGMT-16	*External Source Exposure Reduction.* Where feasible, the project design would incorporate the following best practices to reduce the exposure of future OTC residents to pollutant concentrations from external emission sources: • Maximize the distance between new residential buildings and the Interstate 5 freeway; • Avoid siting new residential buildings within 300 feet of any existing dry-cleaning operation or large gas station (at least 3.6 million gallons annual throughput) or within 50 feet of a typical gas station (less than 3.6 million gallons annual throughput); • Design buildings with varying shapes and heights, building articulations (street frontage design elements like edges and corners that help break up building mass), and open spaces between buildings to encourage air flow; • Include solid barriers, such as sound walls, or dense vegetation barriers along the Interstate 5 freeway to reduce leeward pollutant concentrations (USEPA, 2015, 2016); • Orient buildings adjacent to freeways such that courtyards and residential units with operable windows and balconies face away from the freeway; • Separate pedestrian walkways from streets and intersections expected to have substantial on-road traffic; and • Site bus stops away from major on-road sources and intersections.	Reduces exposure to criteria pollutants and HAPs

AQ MGMT-17	*Plumbing Fixtures.* The project would use the following plumbing fixtures and appliances:
	• Residential buildings:
	  ○ Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi
	  ○ Standard dishwashers: 4.25 gallons per cycle
		Reduces GHGs

BMP	Description	Impacts Reduced/Avoided
	◦ Compact dishwashers: 3.5 gallons per cycle ◦ Clothes washers: water factor of 6 gallons per cubic feet of drum capacity • Non-residential buildings: ◦ Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code ◦ Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code	
AQ MGMT-18	*Fireplaces.* The private development would have no wood or gas fireplaces.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-19	*Sustainable Building Materials.* Where feasible, the construction contractor would use building materials that have recycled content or are derived from sustainable or rapidly renewable sources.	Reduces GHGs
AQ MGMT-20	*Passive Cooling.* Where feasible, the project would maximize natural and passive cooling that builds on the proximity of the Pacific Ocean by employing building design that incorporates vents oriented to capture prevailing winds; ceiling vaults; thermal chimneys, etc. to facilitate air movement. Living spaces would be designed to receive adequate ventilation when windows are open.	Reduces GHGs
AQ MGMT-21	*Innovative Design.* The project would conserve energy use through innovative site design and building orientation that address factors such as sunshade patterns landscape, sunscreens, window sunshades, extended roof eaves, and low emissivity ("low-e") window glass.	Reduces GHGs
AQ MGMT-22	*Electric Vehicle Charging.* The project would include at least 50 percent of the total required listed cabinets, boxes, or enclosures with the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use. This measure applies to both residential and non-residential uses.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-23	*Bicycle Parking.* The project would provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5) for each non-residential use.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-24	*Bicycle Lanes.* The project would include dedicated bicycle lanes that connect to other communities and to the regional bicycle network.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-25	*Designated Parking.* The project would provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles (electric vehicles excluded) in the following quantities for each non-residential use: • 0-9 required parking spaces: 0 designated spaces • 10-25 required parking spaces: 2 designated spaces • 26-50 required parking spaces: 4 designated spaces • 51-75 required parking spaces: 6 designated spaces	Reduces criteria pollutants, HAPs, and GHGs

BMP	Description	Impacts Reduced/Avoided
	• 76-100 required parking spaces: 9 designated spaces • 101-150 required parking spaces: 11 designated spaces • 151-200 required parking spaces: 18 designated spaces • >200 required parking spaces: At least 10% of total The number of required parking spaces is set by the San Diego Municipal Code (Chapter 14).	
AQ MGMT-26	*Transit Passes.* The developer would provide discounted transit passes to residents.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-27	*Pedestrian Network.* The project would be designed to include a complete, functional, and interconnected pedestrian network where feasible.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-28	*Employee Shuttle.* The Navy would coordinate with SANDAG and Metropolitan Transit System to reduce congestion in Midway - Pacific Highway and adjacent communities from vehicles traveling to and from Naval Base Point Loma facilities through the implementation of a federal- and/or regionally funded employee shuttle between Naval Base Point Loma, NAVWAR, and the Old Town Transit Center during morning and afternoon peak travel periods and provision of parking for Naval Base Point Loma employees at NAVWAR.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-29	*Shower Facilities.* Each building that would accommodate over 10 non-residential tenant occupants (employees) would include the following changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code: • 11-50 employees: 1 shower stall and 2 two-tier lockers. • 51-100 employees: 1 shower stall and 3 two-tier lockers. • 101-200 employees: 1 shower stall and 4 two-tier lockers. • Over 200 employees: 1 shower stall plus 1 additional shower stall for each 200 additional tenant occupants, and 1 two-tier locker plus 1 two-tier locker for each 50 additional tenant occupants.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-30	*Transit Stops.* The project would accommodate existing or new transit stops that provide convenient access to high activity/density areas and contain comfortable walk and wait environments for customers.	Reduces criteria pollutants, HAPs, and GHGs
AQ MGMT-31	*Alternative Fuels (Operation).* The Navy shall use alternative fueled or electric mobile operational equipment where feasible.	Reduces criteria pollutants, HAPs, and GHGs
TRANS MGMT-1	*Implement TDM program to reduce single-occupancy vehicle trips induced by the Proposed Action.* TDM involves a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length to help achieve more efficient and sustainable transportation facilities. TDM can help reduce the single-occupancy vehicle trips by providing users with incentives to seek alternative forms of transportation along with information about programs and services. TDM can be	Reduces impacts to transportation network

BMP	Description	Impacts Reduced/Avoided
	beneficial to all users, including residents, employees, guests, property owners/managers, and the community as a whole. Appendix E, Section 27 provides a full list of TDM strategies for consideration.	
TRANS MGMT-2	*Use TSM technology to improve traffic operations along various corridors.* TSM involves the use of technology to manage and more efficiently operate the transportation infrastructure. For example, the City of San Diego has a plan for an Intelligent Transportation Systems program on key transportation corridors within the City. Intelligent Transportation Systems enables the operation of intersections as part of a coordinated system, allows for remote intersection monitoring from the City's Traffic Management Center, and provides flexibility to remotely change signal timing in response to changes in traffic flow based on fluctuating demand or incident impacts (potentially improving LOS). Intersection improvements designed to address the significant impacts of the Proposed Action Alternatives consist of the design, the construction, and integration of Intelligent Transportation Systems improvements, which include, but are not limited to: vehicle detection, computer hardware and networking, fiber-optic communication system upgrades, closed circuit TV cameras, changeable message signs, blank-out signs, equipment and networking management, traffic signal modifications, Traffic Management Center and Decision Support System integration, software licensing, high resolution data, connected vehicle technology, upgrading outdated software and equipment, adaptive traffic signal controllers and cabinets, lane control management, and other improvements to the Intelligent Transportation Systems network.	Reduces impacts to transportation network
TRANS MGMT-3	*Establish a process for future project-specific level clearances.* The EIS recommends establishment of the following process for future project-specific level clearances. Prior to approval of any discretionary project that is forecast to generate more than 100 peak hour trips, the project developers shall prepare a traffic improvement analysis for any facilities under the jurisdiction of the City of San Diego at which the project is anticipated to contribute more than 50 peak hour trips and where a significant unavoidable impact was calculated. Agencies should consider Intelligent Transportation Systems improvements if transportation analysis demonstrates such improvements can achieve acceptable vehicle LOS.	Reduces impacts to transportation network
TRANS MGMT-4	*Coordinate with appropriate agencies on potential transit network efficiencies*. The EIS recommends further evaluation on the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Action Alternatives should provide transit signal priority improvements. Transit signal priority technologies would be implemented or developed by appropriate local transportation agencies. Cost share would be determined by any future development agreements and associated developer impact fees prior to any lease or land transfer agreement. • Midway Drive, between East Drive to Rosecrans Street • Rosecrans Street, between Dewey Road and Pacific Highway • Pacific Highway, between Friars Road and Washington Street • Taylor Street, between Presidio Drive and Interstate 8 Eastbound Ramps	Reduces impacts to transportation network

BMP	*Description*	*Impacts Reduced/Avoided*
TRANS MGMT-5	*Coordinate with appropriate agencies to prepare a Transit Mobility Plan for the Proposed Action Alternatives that include a transit center*. The plan would propose to consolidate transition operations on OTC. The Transit Mobility Plan would be implemented or developed by appropriate local transportation agencies. Cost share would be determined by any future development agreements and associated developer impact fees prior to any lease or land transfer agreement.	Reduces impacts to transportation network
VIS MGMT-1	*Limitations to Avoid Silhouetting against the Ocean Horizon.* Any efforts that can be done to limit the number of buildings that are silhouetted against the horizon line of the Pacific Ocean would be instrumental in lowering the adversity of view impacts. The ability to step down buildings with perhaps some buildings still piercing the horizon line would be an alternative to consider that would minimize this impact. A single tower or multiple tall towers that break this line without a transition of other buildings around it that are shorter focuses the attention on a stark contrast in scale change. Specific areas of concern include the northwest views from North, Central and South Mission Hills sub-areas looking towards the Pacific Ocean to the west. If the north end of OTC Site 1 is tapered and pulled back from this location, many public and private views would still see the Pacific Ocean to the west and northwest, although much of the view may still be blocked by buildings.	Reduces impacts to visual resources at specific KOPs
VIS MGMT-2	*Height Limitation to Avoid Silhouetting against the Sky.* A building that extends above the top of landforms from various viewpoints would be more impactful than a building that is low enough to see landforms to the west (Cabrillo Point and the Point Loma Peninsula as seen from the east) and to the east (Mission Hills/Presidio and North Mission Valley landforms as seen from the west). It would not be possible to avoid sky silhouetting in all areas of the viewshed. Only those viewing locations at higher elevations would be positively affected by this change. Areas of concern would include buildings seen from the Midway District area around Sports Arena, Rosecrans, and Midway.	Reduces impacts to visual resources at specific KOPs
VIS MGMT-3	*Stepping Down Building Heights to Adjacent Areas.* If some buildings were kept tall and pierced the ocean's horizon line or those of adjacent landforms, it would still be effective to lower the overall sense of scale by stepping down buildings in all directions.	Reduces impacts to visual resources at specific KOPs
VIS MGMT-4	*View Corridors to be Kept Open*. Making a tower taller and creating gaps between other buildings may resolve some view corridor problems. However, what may allow some view corridors to be more open may force the bulk of the massing to another location that may increase the view blockage in another view corridor. But the San Diego sub-region has specific viewing locations with public and major private views in known areas. It has clear sub-regionally important viewing scenes that are most visible to these viewing locations. So, with some level of effort, it would be possible to find the best locations for building gaps and building orientation. The important viewing scenes of greatest concern tend to be from the northeast looking to the southwest with views of San Diego Bay, Coronado, Cabrillo Point, and the Pacific Ocean.	Reduces impacts to visual resources at specific KOPs

BMP	Description	Impacts Reduced/Avoided
VIS MGMT-5	*Centralized Massing to Minimize the Number of Buildings*. Many of the alternatives have a number of building towers. These narrow but tall buildings tend to make the complex look like a city downtown instead of a major complex of related buildings. In addition, the offsets of buildings that are not aligned with each other can contribute to more of the corridors being blocked. This would be like a forest of trees that are not aligned with each other compared to an agricultural orchard where views are obstructed through certain viewing angles, but not at all from other angles. To avoid this phenomenon, less towers that are more massive in bulk and that are aligned with the northeast to southwest corridor alignment could improve the opening of view corridors and lower the sense of scale that the multiple buildings may be exaggerating.	Reduces impacts to visual resources at specific KOPs
VIS MGMT-6	*Conceal or Integrate Parking Garages.* Looking from the west side of OTC Site 2 or from many parts of OTC Site 1, the presence of parking structures would not be significant of a visual quality issue. This assumes that parking structures do not allow for large openings in the elevations that allow a person to see parked cars and hanging lights and utility piping. A lower parapet style wall to conceal parked cars and a brow from the upper floor are both essential to limit visual penetration into the structure and vehicle light and parking garage lighting to spill out. The exterior materials must be made to relate to the adjacent building elevations and materials. The use of a vertical perforated screens or patterned laser cut metal panels or offsetting planes that allow air and light in, but that obscure clear views in would be positive.	Reduces impacts to visual resources at specific KOPs
VIS MGMT-7	*Maintain Horizontal Banding and Fenestration on Buildings.* It is common for architecture to portray dynamic vertical elements to accentuate the overall scale and iconic power of the building. However, the overall structure of tall buildings is already strongly vertical. Horizontal banding and fenestration that sets each floor as a horizontal design element helps to reduce the apparent size of the building.	Reduces impacts to visual resources at all KOPs analyzed
VIS MGMT-8	*Integrate and Connect a Series of Plazas, Streets and Spaces.* A strong foundation of an elevated or terraced set of open-air spaces at the ground levels of buildings could make the project feel as though it is a campus-like setting instead of a series of buildings and streets like many downtown areas. This space would also help in creating and maintaining some of the view corridors across OTC.	Reduces impacts to visual resources at specific KOPs
VIS MGMT-9	Exterior lighting could be architecturally integrated with the character of all structures, energy-efficient, and shielded or recessed so that direct glare and reflections would be confined, to the maximum extent feasible, within the boundaries of OTC.	Reduces impacts from light and glare
VIS MGMT-10	Obtrusive light could be minimized by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and light required for the development could be directed downward to minimize spill over onto adjacent properties and reduce vertical glare or up-lighting.	Reduces impacts from light and glare
VIS MGMT-11	The project could be required to meet the lighting standards contained in the CALGreen Code for green building standards. This code is issued by the Building Standard Commission of the California Department of General Services.	Reduces impacts from light and glare

BMP	Description	Impacts Reduced/Avoided
VIS MGMT-12	A lighting plan consistent with the U.S. Green Building Council's LEED Green Building Rating System requirements could be developed. The project could achieve at least the U.S. Green Building Council's LEED v4 Silver certification. Consistency with LEED requirements could reduce both the generation of exterior light and the potential for light trespass to affect off-site areas.	Reduces impacts from light and glare
VIS MGMT-13	Light-emitting diode light fixtures could be used for all interior and exterior lighting and fixtures and could be selected based on architectural aesthetic, efficiency, maintenance, and glare control.	Reduces impacts from light and glare
VIS MGMT-14	Professionally recommended lighting levels could be determined for each activity area to prevent over-lighting and reduce electricity consumption.	Reduces impacts from light and glare
VIS MGMT-15	Shielded fixtures with efficient light bulbs could be used in the parking lot to prevent any glare and light spillage beyond the property line. Shielded fixtures would also help in preventing light pollution of the dark sky.	Reduces impacts from light and glare
VIS MGMT-16	To protect spill over on Interstate 5 and the Pacific Highway, luminaries would be shielded, reduced in intensity, or otherwise protected from view to reduce the brightness of a light source within 10 degrees from a driver's normal line-of-sight.	Reduces impacts from light and glare
VIS MGMT-17	The maximum measurable luminance of the illuminated building façade would not exceed 40 candela per square meter. Additionally, an area weighted average of field measurements would not exceed 10 candela per square meter for any single contiguous façade area greater than 7,500 square feet in area.	Reduces impacts from light and glare
VIS MGMT-18	Glass used in building façades could be anti-reflective or treated with an anti-reflective coating in order to minimize glare.	Reduces impacts from light and glare
VIS MGMT-19	The following treatments would not be allowed as part of the Proposed Action Alternatives materials: • Reflective glass that exceeds 50 percent of any building surface and none on the bottom three floors • Mirrored glass • Black glass that exceeds 25 percent of any surface of a building • Metal building materials that exceed 50 percent of any street facing surface • Exposed concrete that exceeds 50 percent of any building The following use of building materials would be encouraged: • natural stone • galvanized metal • matte or low gloss painted materials including steel, metal, and wood • precast concrete panels with low reflectivity • clear or lightly tinted glass • brushed stainless steel versus polished stainless steel	Reduces impacts from light and glare

BMP	Description	Impacts Reduced/Avoided
	• anodized aluminum • composite panels that are not pure or bright white	
HAZ MGMT-1	Hazardous materials would be identified and remediated in compliance with all applicable regulations prior to demolition or renovation. Compliance with regulations would be included in any construction, demolition, or renovation contract language.	Minimize potential impacts related to the handling and disposal of hazardous materials and wastes
HAZ MGMT-2	IR sites would continue to be managed under the IR Program coordinated with the San Diego Regional Water Quality Control Board and the California Department of Toxic Substances Control. These agencies would require that existing site conditions (e.g., uncontained sites, sites with land use controls) be compatible with proposed future land uses for the site.	Minimize potential impacts from previously contaminated sites
PHS MGMT-1	Implement all applicable federal and state regulations for demolition and construction including construction safety BMPs and preparation of a construction site safety plan.	Minimize potential public health and safety impacts during construction
PHS MGMT-2	Any reconfiguration, upgrading, or addition of new electromagnetically capable equipment would undergo electromagnetic interference and radiation hazards studies prior to implementation.	Avoid potential public health and safety impacts during operations from sources of electromagnetic interference or radiation
PHS MGMT-3	Submit proposed mixed-use development project plans for a "Crime Prevention Through Environmental Design Review" by the City of San Diego and San Diego Police Department. The review procedure is designed to ensure emergency response times are not significantly impacted by new development.	Avoid potential public health and safety impacts
PHS MGMT-4	Consult with FAA during the environmental review phase of the Proposed Action Alternatives to gain approval to penetrate various clearance surfaces.	Avoid potential flight safety impacts
INFRA MGMT-1	Conduct a Water Supply Assessment in collaboration with the San Diego Public Utilities Department and procure/design potable water supply system to meet capacity demand.	Minimize potential impacts to public utilities and infrastructure
GEO MGMT-1	Standard engineering measures would be implemented and in compliance with the Construction General Permit, including implementation of a project-specific stormwater pollution prevention plan with associated BMPs to minimize erosion and stabilize soils.	Reduce potential impacts to geological resources during construction
GEO MGMT-2	Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site.	Reduce potential impacts to geological resources
GEO MGMT-3	A subsurface geotechnical investigation and fault hazard investigation would be conducted to determine soil properties in addition to the seismic and liquefaction hazards for the project site. All new structures would be designed and constructed to comply with the seismic design criteria identified in the UFC, the NAVFAC P-	Reduce potential impacts from geological resources

BMP	Description	Impacts Reduced/Avoided
	355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. If needed, measures identified in the geotechnical investigation would be implemented to minimize impacts associated with specific hazards (SANDAG, 2014a). These may include but are not limited to the following: • *Rupture of a known earthquake fault*: any new construction would adhere to required setbacks from any active fault identified during the geotechnical investigation. • *Liquefaction*: (1) in-situ ground improvement methods (e.g., densification or solidification), (2) transferring of load to underlying bearing layers that are non-liquefiable, or (3) excavation of susceptible soils and replacement with compacted engineered fill. • *Lateral spread*: (1) in-situ ground improvement methods (e.g., densification or solidification), (2) designing the foundation to resist horizontal permanent ground displacement, or (3) subsurface barrier walls. • *Compressible soils*: (1) in-situ densification of compressible soils, (2) transferring of load to underlying non-compressible layers (i.e., through the use of pile or drilled shaft foundations), and (3) surcharging or excavation of compressible soils and replacement with compacted engineered fill. • *Expansive soils*: (1) drainage-control devices to limit water infiltration near foundation, (2) excavation of expansive soils and replacement with compacted engineered fill, and (3) support of the new structures on piles that are designed to resist impacts of expansive soils.	
WATER MGMT-1	Before demolition or construction at OTC, the Navy would establish compliance with the planning requirements contained in the Construction General Permit. The construction contractor would prepare and implement a construction stormwater pollution prevention plan and ensure that all BMPs and other appropriate control measures specified in the permit and stormwater pollution prevention plan were implemented and monitored. If construction dewatering is required, the Navy would obtain a separate Waste Discharge Requirement permit for handling the dewatering effluent.	Reduce potential impacts to water resources from construction activities
WATER MGMT-2	During project construction, the Navy would implement/install all low impact development measures required to comply with Navy building standards.	Reduce potential impacts from stormwater
WATER MGMT-3	Following construction and prior to project operations, the Navy would obtain an amended stormwater permit (RWQCB Order No. R9-2014-0037, as Amended by Order No. R9-2017-0010, National Pollutant Discharge Elimination System Permit No. CA0109363–Waste Discharge Requirements for U.S. Department of the Navy [Naval Base Point Loma Permit]) and update the stormwater pollution prevention plan and stormwater management plan to reflect changes in site layout, operations, and risk levels. The Navy would then implement the updated plans. The Navy would also demonstrate that the project complies with the performance objective for site hydrology as required by section 438 of the Energy Independence and Security Act.	Reduce potential impacts from stormwater

BMP	Description	Impacts Reduced/Avoided
BIO MGMT-1	Before demolition, renovation, or repairs of any building or structure that bats could potentially roost in, a qualified biologist will check the structure for any evidence of roosting bats. If any bats are detected, they will be passively excluded (prevented from returning once they have exited the building for evening foraging) before demolition or renovation activities.	Reduce potential impacts to bats birds during construction and/or demolition
BIO MGMT-2	If demolition or construction activities take place during the bird breeding season (February 14 to August 31), a qualified biologist will conduct surveys for nesting birds within a 500-foot radius of the demolition or construction area (including potential building-nesting birds). If nests are detected, 250-foot no-activity buffers will be established around nests to ensure that breeding is not disrupted or adversely impacted by demolition and/or construction. Buffers will be maintained until the young fledge or the nests become inactive.	Reduce potential impacts to birds during construction and/or demolition
BIO MGMT-3	All new outdoor nighttime lighting would include bat- and bird-friendly design features such as shielded lights (to reduce ambient light), use of motion detectors and other automatic controls, and lighting design that uses shields to prevent light from shining upward into the sky (American Bird Conservancy, 2019).	Reduce potential impacts to birds from nighttime lighting
BIO MGMT-4	New buildings and structures would incorporate a bird-friendly design to prevent or reduce the likelihood of bird collisions with buildings. Bird-friendly design features include transparent passageways, corners, atria, or courtyards so that birds do not get trapped; interior lighting that is turned off at night or designed to minimize light escaping through windows; and landscaping that is designed to keep birds away from the buildings' façade. Use of nonreflective or opaque glass; external shades (or other devices to reduce glare, transparency, or reflectiveness) on windows; ultraviolet patterned glass; angled glass; and/or louvers can aid in reducing bird collisions (American Bird Conservancy, 2019).	Reduce potential impacts to bats from collisions with buildings

Legend: ADT = average daily traffic; BMPs = best management practices; CARB = California Air Resources Board; HOV = high-occupancy vehicle; IR = Installation Restoration; KOP = key observation point; LEED = Leadership in Energy and Environmental Design; LOS = level of service; Programmatic Agreement = Programmatic Agreement; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; SDAPCD = San Diego Air Pollution Control District; SHPO = State Historic Preservation Officer; TMD = Transportation Demand Management; TSM = Transportation Systems Management; USEPA = U.S. Environmental Protection Agency.

3 Affected Environment and Environmental Consequences

This chapter presents a description of the environmental resources and baseline conditions that could be affected from implementing any of the alternatives and an analysis of the potential direct and indirect effects of each alternative.

All potentially relevant environmental resource areas were initially considered for analysis in this EIS. In compliance with NEPA, the CEQ, and Department of Navy guidelines; the discussion of the affected environment (i.e., existing conditions) focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in describing a resource is commensurate with the anticipated level of potential environmental impact.

"Significantly," as used in NEPA, requires considerations of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (e.g., human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant. Intensity refers to the severity or extent of the potential environmental impact, which can be thought of in terms of the potential amount of the likely change. In general, the more sensitive the context, the less intense a potential impact needs to be in order to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be significant.

This section includes air quality, transportation, visual resources, land use, socioeconomics, cultural resources, hazardous materials and wastes, public health and safety, environmental justice, public services, infrastructure, airspace, noise, geological resources, water resources, and biological resources.

3.1 Air Quality

This discussion of air quality includes criteria pollutants, hazardous air pollutants (HAPs), standards, emission sources, permitting, and GHGs. Air quality in a given location is defined by the concentration of various pollutants in the atmosphere. Many factors influence a region's air quality, including the type and amount of pollutants emitted into the atmosphere, the size and topography of the affected air basin, and the prevailing meteorological conditions. Most air pollutants originate from human-made sources, including mobile sources (e.g., cars, trucks, and buses), stationary sources (e.g., factories, refineries, and power plants), and indoor sources (e.g., some building materials and cleaning solvents). Natural sources such as wildfires also release air pollutants.

3.1.1 Definitions

The following are important definitions for air quality. Additional detail is available in Appendix D.

3.1.1.1 Criteria Pollutants

Under the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) establishes National Ambient Air Quality Standards (NAAQS) for common air pollutants known as "criteria pollutants". These criteria pollutants include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ground level ozone, suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). NAAQS are classified as primary or secondary. Primary standards protect against adverse health effects. Secondary standards protect against welfare effects, such as damage to crops, vegetation, and buildings. Appendix D Section 2 presents descriptions of health effects due to exposure to criteria pollutants.

CO, SO_2, Pb, and some particulates enter the atmosphere directly from emissions sources. Ozone, most NO_2, and some particulates form through atmospheric chemical reactions of their precursor pollutants that are influenced by weather, ultraviolet light, and other atmospheric processes. Ozone precursors include nitrogen oxides (NO_x) and volatile organic compounds (VOCs). NO_2 precursors include NO_x. Particulate matter precursors include NO_x, sulfur oxides (SO_x), VOCs, and ammonia.

Areas that are and have historically been in compliance with an ambient air quality standard are designated as attainment areas. Areas that violate an ambient air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment.

The CAA requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans (SIPs), are developed by state and local air quality management agencies, and submitted to USEPA for approval.

Under the California CAA, the California Air Resources Board (CARB) establishes California Ambient Air Quality Standards (CAAQS) for the criteria pollutants as well as sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. The CAAQS are generally more stringent than the NAAQS.

3.1.1.2 Hazardous Air Pollutants

In addition to criteria pollutants, the CAA also gives USEPA authority to regulate HAPs. HAPs have the potential to cause cancer or other adverse health effects in humans. Examples of HAPs include hydrocarbons such as benzene, certain metals including lead and mercury, and mineral fibers such as asbestos. The National Emission Standards for HAPs regulate HAP emissions from stationary sources (40 CFR part 63). USEPA regulates HAPs emitted from mobile sources by establishing engine exhaust and fuel standards.

The NEPA air quality analysis in this section focuses on potential emissions of the federal-listed HAPs from each action alternative. However, CARB also regulates its own list of HAPs and refers to them as toxic air contaminants (TACs). As a result, the descriptions of existing air quality in this section originate from TAC studies performed by state and local air agencies. Diesel-exhaust particulate matter (DPM) is a TAC of particular concern in California because it is the largest contributor of any airborne pollutant to statewide average cancer risk (San Diego Air Pollution Control District [SDAPCD], 2019). DPM is emitted from a broad range of sources such as diesel trucks, buses, locomotives, marine vessels, and heavy-duty construction equipment. Although DPM is not a listed HAP, several of the compounds that comprise DPM are listed HAPs. An evaluation of potential public health impacts due to DPM emitted from Alternatives 4 and 5 is provided in Appendix A, *CEQA Analysis.*

3.1.1.3 Greenhouse Gases

GHGs are air pollutants that trap heat in the atmosphere. GHG emissions occur from natural processes and human activities. Examples of GHGs from human activities include carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases. The natural balance of GHGs in the atmosphere regulates the earth's temperature. Scientific evidence indicates a correlation between the worldwide proliferation of GHG emissions by humankind and increasing global temperatures over the past century.

Each GHG has a global warming potential (GWP), which is its ability to trap heat in the atmosphere. To account for GWPs, GHG emissions are reported as a carbon dioxide equivalent (CO_2e). CO_2e emissions are commonly expressed in units of metric tons. One metric ton equals 1,000 kilograms or 1.1 short tons (2,205 pounds).

The most recent assessment of climate change impacts in California conducted by the State of California (California's Fourth Climate Change Assessment) predicts that temperatures will increase 5.6- or 8.8-degrees Fahrenheit (°F) by 2100 compared to a baseline of 1976–2005, based on scenarios of moderate GHG emission reductions from current levels or a continuation of current GHG emission levels (business-as-usual) (Bedsworth, et al., 2018). Predictions of long-term negative environmental impacts in California include exacerbation of air quality problems, a substantial reduction in potential municipal water supply from the Sierra snowpack, sea level rise that would displace coastal development, an increase in wildfires, damage to ecosystems and infrastructure, reductions in agricultural production, and an increase in the incidences of human health problems.

The Navy takes proactive measures to reduce GHG emissions by decreasing the use of fossil fuels and increasing the use of alternative energy sources in accordance with the goals set by Executive Orders (EOs), the Energy Policy Act of 2005, and Navy and DoD policies. In addition, the DoD conducts research on potential impacts from climate change and develops measures for installations to adapt to these threats (DoD Strategic Environmental Research and Development Program, 2020). The State of California also has developed strategies for adapting to future climatic effects (California Natural Resources Agency, 2018; Governor's Office of Emergency Services, 2020). The City of San Diego proposes a similar approach through their City of San Diego Climate Action Plan (City of San Diego, 2016a).

The potential effects of proposed GHG emissions are by nature cumulative impacts because global sources of GHGs contribute to global climate change. Section 4.4.1, *Air Quality* presents the cumulative analysis of GHGs emitted from the action alternatives. Section 5.5, *Climate Change* also presents descriptions of existing and predicted climate change conditions for the project region.

3.1.2 Region of Influence

The region of influence (ROI) for assessing air quality impacts is the San Diego Air Basin (SDAB), with attention to the immediate area surrounding OTC. The SDAB includes all of San Diego County. The ROI for GHGs is global.

3.1.3 Regulatory Setting

Various governing laws, regulations, and agency plans serve to protect air quality and to reduce air pollutant emissions. Those that could apply to the Proposed Action Alternatives as it relates to the air quality and GHG resources include the following:

Federal regulations and plans:

- Clean Air Act (40 CFR parts 50-99 and 40 CFR parts 1000-1099)
- National Ambient Air Quality Standards (40 CFR part 50)
- State Implementation Plan (40 CFR parts 51-52)

- General Conformity Rule (CAA Section 176(c); 40 CFR part 93 subpart B)
- New Source Performance Standards (40 CFR part 60)
- National Emission Standards for HAPs (40 CFR part 63)

State regulations and plans:

- California Health and Safety Code Section 41700
- In-Use Off-Road Diesel-Fueled Fleets
- California Air Toxics Program (Assembly Bills 1807 and 2588)
- Air Toxic Control Measures for Diesel-Fueled Commercial Motor Vehicle Idling
- Energy Efficiency Standards (Title 24, Part 6)
- Green Building Standards (CalGreen; Title 24, Part 11)
- 2017 Climate Change Scoping Plan[1]

Regional and local regulations and plans:

- SDAPCD Rules and Regulations (SDAPCD, 2020a)
- SDAPCD Regional Air Quality Strategy[2]
- City of San Diego Green Building Regulations
- City of San Diego Climate Action Plan[3]
- City of San Diego General Plan[4]
- City of San Diego Midway-Pacific Highway Community Plan[5]
- SANDAG San Diego Forward: The Regional Plan[6]

Appendix D provides more detailed descriptions of these regulations and plans. Appendix D also describes additional regulations that would not directly apply to the Proposed Action Alternatives but would apply to manufacturers of on-road vehicles and off-road equipment used under the Proposed Action Alternatives.

3.1.3.1 Additional Federal Regulations

State Implementation Plan

The USEPA currently designates San Diego County as a nonattainment area for national 8-hour ozone, with a classification of serious under the 2008 standard and moderate under the 2015 standard (USEPA, 2020a). The USEPA designates San Diego County as in attainment for all other NAAQS.

The SDAPCD is responsible for implementing and enforcing state and federal air quality regulations in San Diego County. In coordination with CARB and SANDAG, the SDAPCD prepares and implements SIPs and air quality attainment plans for San Diego County.

[1] Consistency with this plan was evaluated exclusively under CEQA in Appendix A.
[2] Ibid
[3] Ibid
[4] Ibid
[5] Ibid
[6] Ibid

The ozone portion of the current SIP for San Diego County is titled 2008 Eight-Hour Ozone Attainment Plan for San Diego County (SDAPCD, 2016). The Eight-Hour Ozone Attainment Plan addresses the national 8-hour ozone standard of 0.075 parts per million (ppm) established by the USEPA in 2008 (hence the "2008" in the title). It identifies control measures and associated emission reductions needed to demonstrate attainment of the 2008 ozone standard by July 20, 2018. It relies on the SDAPCD's Regional Air Quality Strategy, described in Appendix D Section 1.3, to demonstrate how the region will comply with the national ozone standard. In October 2020, the District Board approved the Final 2020 Plan for Attaining the National Ozone Standards (2020 Ozone Plan) (SDAPCD, 2020b). In this plan, the SDAPCD requests that the USEPA re-designate San Diego County to severe nonattainment areas for both the 2008 and 2015 ozone NAAQS to allow more time to bring the region into attainment of these standards. CARB approved the 2020 Ozone Plan on November 19, 2020 (CARB, 2020a) and submitted it to the USEPA on January 8, 2021 for consideration as a revision to the California SIP for attaining the ozone standards.

General Conformity Rule

CAA Section 176(c), commonly known as the USEPA General Conformity Rule, generally prohibits federal agencies from engaging in, supporting, permitting, or approving any activity that does not conform to the most recent USEPA-approved SIP. The General Conformity Rule applies to federal actions located in areas that are in nonattainment of a NAAQS or designated as maintenance areas (attainment areas that have been reclassified from a previous nonattainment status and are required to prepare an air quality maintenance plan). Conformity requirements only apply to criteria pollutants and their precursor emissions. If a conformity applicability analysis shows that the net annual direct and indirect emissions generated by the Proposed Action Alternatives would be below the applicable *de minimis* thresholds, then the action would be exempt from any further requirements under the General Conformity Rule.

Because San Diego County is a nonattainment area for ozone, a conformity applicability analysis is required of proposed ozone precursor emissions of VOCs and NO_x. The most stringent *de minimis* threshold for the county, based on the current serious ozone nonattainment classification, is 50 tons per year of VOCs or NO_x, as presented in Table 3.1-1. It is reasonably foreseeable that the USEPA will approve the 2020 Ozone Plan within the 18-month period required by the CAA (review period began January 8, 2021). Therefore, the project conformity applicability analyses (and NEPA analyses) rely on the conformity *de minimis* threshold that pertains to a severe ozone nonattainment classification of 25 tons per year of VOCs or NO_x. Section 3.1.5, *Environmental Consequences* provides conformity applicability analyses for Alternative 1 (standalone Navy action) and Alternative 4 (Preferred Alternative).

Table 3.1-1 General Conformity *de minimis* Thresholds for the Proposed Action Alternatives

Pollutant	*Area Nonattainment Designation*	*de minimis Threshold (tpy)*
Ozone (VOC or NO_x)	Severe nonattainment	25
Ozone (VOC or NO_x)	Serious nonattainment	50
Ozone (VOC or NO_x)	Moderate nonattainment	100

Legend: NO_x = nitrogen oxides; tpy = tons per year; VOC = volatile organic compounds.

3.1.4 Affected Environment

The project site is located within the SDAB, which encompasses all of San Diego County.

3.1.4.1 Regional Climate

The climate of the project region is classified as Mediterranean, characterized by warm and dry summers and mild winters with moderate precipitation. The major influences on the regional climate are the Northeast Pacific High, a strong, persistent high pressure system, and the moderating effects of the Pacific Ocean. Seasonal variations in the position and strength of the Northeast Pacific High are key factors in the weather changes in the area. The project site averages about 10 inches per year of rainfall, as measured at nearby Lindberg Field (Western Regional Climate Center, 2020). About 90 percent of the annual rainfall occurs from November through April. The annual average maximum temperature in the project area is approximately 70°F, and the annual average minimum temperature is approximately 56°F. The dominant Northeast Pacific High pressure system produces prevailing westerly to northwesterly winds, which blow pollutants away from the coast and towards inland areas.

3.1.4.2 Regional Criteria Pollutant Emissions

Table 3.1-2 presents annual criteria pollutant emissions for the SDAB due to anthropogenic air pollution sources, as projected for year 2020 (CARB, 2020b). CARB groups these data into three broad source categories:

- Stationary sources include point sources of industrial and commercial fuel combustion, industrial surface coating (e.g., painting) and related solvent use, petroleum marketing (e.g., gasoline stations), mineral processes (e.g., sand, gravel, and crushed stone processing), and other lesser-contributing sources.
- Areawide sources include consumer product use, architectural coating and related solvent use, construction and demolition activities, paved road dust, unpaved road dust, residential fuel combustion, cooking, and other lesser-contributing sources.
- Mobile sources include on-road motor vehicles (e.g., automobiles, trucks, buses, etc.), aircraft, off-road equipment, locomotives, marine vessels, and other lesser-contributing sources.

Table 3.1-2 shows that the mobile sources category is the largest contributor of all pollutant emissions in the SDAB except particulate matter. The most dominant mobile source subcategory is on-road vehicles, which contribute 47, 17, 40, and 33 percent of the total NO_x, VOC, CO, and SO_x emissions, respectively. Areawide sources are the largest contributor to emissions of PM_{10} and $PM_{2.5}$. The most dominant areawide source subcategory is construction and demolition activities, which together contribute 47 and 19 percent of the total PM_{10} and $PM_{2.5}$ emissions, respectively.

Table 3.1-2 San Diego Air Basin Criteria Pollutant Emission Inventory – Projected for Year 2020 (tons per day)

Emission Source Category	*ROG*	NO_x	*CO*	SO_x	PM_{10}	$PM_{2.5}$
Stationary Sources	29.7	3.9	14.5	0.3	8.1	2.6
Areawide Sources	34.8	2.6	15.8	0.1	65.2	12.0
Mobile Sources	41.1	64.0	301.3	0.7	8.2	5.1
SDAB Total	**105.6**	**70.4**	**331.6**	**1.2**	**81.5**	**19.7**

Legend: CO = carbon monoxide; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 microns in diameter; ROG = reactive organic gases (CARB reports organic compounds that react to form ozone as such, and they are a similar group of compounds that the USEPA reports as VOCs); SO_x = sulfur oxides.

Note: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

Source: CARB, 2020b.

3.1.4.3 Local Criteria Pollutant Concentrations

The SDAPCD maintains several air quality monitoring stations throughout the greater San Diego metropolitan region. These stations continuously record criteria air pollutant concentrations and meteorological information. Measurements are used to forecast daily air pollution levels and to determine compliance with the NAAQS and CAAQS.

Table 3.1-3 presents the most recent 3 years of ambient air pollutant data (2017-2019) recorded at the nearest monitoring stations to OTC with available data. These stations include:

- Sherman Elementary School, 450B 24th Street, San Diego (3.8 miles southeast of OTC). This station began operating in July 2019. Table 3.1-3 used this station for 1-hour ozone, 8-hour ozone (CAAQS only) and 1-hour NO_2 (CAAQS only) concentrations in 2019[7].
- 6125A Kearny Villa Road, San Diego (7.8 miles northeast of OTC). Table 3.1-3 used this station for ozone, NO_2, PM_{10}, and $PM_{2.5}$ concentrations in 2017 and 2018; and for 8-hour ozone (NAAQS only), 1-hour NO_2 (NAAQS only), annual NO_2, and $PM_{2.5}$ concentrations in 2019. The PM_{10} monitor did not operate in 2019.
- 84 E. J Street, Chula Vista (11.1 miles southeast of OTC). Table 3.1-3 used this station for PM_{10} concentrations in 2019.
- Lexington Elementary School, 533 South First Street., El Cajon (14.7 miles east of OTC). Table 3.1-3 used this station for CO and SO_2 concentrations.

During the three-year monitoring period, (1) the 1-hour ozone CAAQS was exceeded on 2 days in 2017 and 1 day in 2018; (2) the 8-hour ozone CAAQS and NAAQS (2015 standard) were exceeded on 6 days in 2017, 5 days in 2018, and 1 day in 2019; (3) the 8-hour ozone NAAQS (2008 standard) was exceeded on 4 days in 2017 and 1 day in 2018; and (4) the 24-hour PM_{10} CAAQS was exceeded on 1 day in 2019. All other pollutant concentrations at stations nearest to OTC were less than their applicable standards during the three-year monitoring period.

[7] The Sherman Elementary School station did not provide 2019 annual average pollutant concentrations because the station did not operate for the full year. Additionally, the 2019 NAAQS concentrations for 8-hour ozone, 1-hour NO_2, and 24-hour $PM_{2.5}$ were not available for this station because the NAAQS concentrations require a three-year average (2017-2019), and the station only began operating in 2019.

Table 3.1-3 Ambient Criteria Pollutant Monitoring Data, 2017-2019

Pollutant	*Averaging Time*	*Agency*	*Unit of Measure*	*Ambient Air Quality Standard*	*Annual Concentration(1)(2)(3) 2017*	*Annual Concentration(1)(2)(3) 2018*	*Annual Concentration(1)(2)(3) 2019*
Ozone	1-Hour	State	ppm	0.09	**0.097**	**0.102**	0.084
Ozone	8-Hour	State	ppm	0.070	**0.084**	**0.077**	**0.072**
Ozone	8-Hour	Federal (2015 std.)	ppm	0.070	0.070	**0.072**	**0.071**
Ozone	8-Hour	Federal (2008 std.)	ppm	0.075	0.070	0.072	0.071
NO_2	1-Hour	State	ppm	0.18	0.054	0.045	0.062
NO_2	1-Hour	Federal	ppm	0.100	0.042	0.040	0.039
NO_2	Annual	State	ppm	0.030	0.009	0.008	0.008
NO_2	Annual	Federal	ppm	0.053	0.009	0.008	0.008
CO	1-Hour	State	ppm	20	1.5	1.4	1.3
CO	1-Hour	Federal	ppm	35	1.5	1.4	1.3
CO	8-Hour	State	ppm	9.0	1.4	1.1	1.0
CO	8-Hour	Federal	ppm	9	1.4	1.1	1.0
SO_2	1-Hour	State	ppm	0.25	0.001	0.004	0.001
SO_2	1-Hour	Federal	ppm	0.075	0.001	0.001	0.001
SO_2	24-Hour	State	ppm	0.04	0.0004	0.0004	0.0003
PM_{10}	24-Hour	State	μg/m³	50	47	38	**69**
PM_{10}	24-Hour	Federal	μg/m³	150	46	38	68
PM_{10}	Annual	State	μg/m³	20	17.6	18.4	19.0
$PM_{2.5}$	24-Hour	Federal	μg/m³	35	15	17	18
$PM_{2.5}$	Annual	State	μg/m³	12	8.0	8.3	7.0
$PM_{2.5}$	Annual	Federal	μg/m³	12.0	7.6	8.0	7.8

Legend: CO = carbon monoxide; NO_2 = nitrogen dioxide; PM_{10} = suspended particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 microns in diameter; std. = standard; ppm = parts per million by volume; SO_2 = sulfur dioxide; μg/m³ = micrograms per cubic meter.

Notes: (1) Displayed short-term (1-, 8-, and 24-hour) concentrations are the highest concentrations recorded during the year with the following exceptions: The federal 8-hour ozone concentration is the three-year average (including the displayed year and the preceding 2 years) of the fourth-highest daily maximum 8-hour concentration. The federal 1-hour NO_2 concentration is the three-year average of the 98th percentile of 1-hour daily maximum concentrations. The federal 24-hour $PM_{2.5}$ concentration is the three-year average of the 98th percentile concentration. The federal annual $PM_{2.5}$ concentration is the three-year average of the annual mean concentration. The federal 1-hour SO_2 concentration is the three-year average of the 99th percentile of 1-hour daily maximum concentrations.

(2) Concentrations were obtained from the nearest monitoring station with available data. The Sherman Elementary School station was used for 1-hour ozone, 8-hour ozone (CAAQS only) and 1-hour NO_2 (CAAQS only) concentrations in 2019. The Kearny Villa Road station was used for ozone, NO_2, PM_{10}, and $PM_{2.5}$ concentrations in 2017 and 2018; and for 8-hour ozone (NAAQS only), 1-hour NO_2 (NAAQS only), annual NO_2, and $PM_{2.5}$ concentrations in 2019. The Chula Vista station was used for PM_{10} concentrations in 2019. The Lexington Elementary School station was used for CO and SO_2 concentrations.

(3) Exceedances of the standard are shown in bold.

Sources: CARB, 2020c; CARB, 2021; USEPA, 2021; SDAPCD, 2021.

3.1.4.4 Statewide GHG Emissions

CARB performs statewide GHG inventories grouped into broad economic sectors. Table 3.1-4 shows the estimated statewide GHG emissions for the years 1990, 2010, and 2018. Although GHG inventories are available for each year through 2018, the selected years are included in the table because 1990 is the baseline year for established statewide GHG reduction targets, 2010 corresponds to the year for which inventory data for the city are available, and 2018 is the most recent statewide inventory year available as of April 2021.

As shown in Table 3.1-4, statewide GHG source emissions totaled about 431 million metric tons (MMT) of CO_2e in 1990, 449 MMT of CO_2e in 2010, and 425 MMT of CO_2e in 2018. Many factors affect year-to-year changes in GHG emissions, including economic activity, demographic influences, environmental conditions such as drought, and the impact of regulatory efforts to control GHG emissions. Transportation-related sources consistently are the largest contributors to statewide GHG emissions, followed by electricity generation and industrial sources.

Table 3.1-4 California GHG Emissions by Economic Sector in 1990, 2010, and 2018

Economic Sector	*Annual Emissions (MMT CO2e) 1990*	*Annual Emissions (MMT CO2e) 2010*	*Annual Emissions (MMT CO2e) 2018*
Electricity Generation	110.5	90.6	63.3
Transportation	150.6	170.2	173.8
Industrial	105.3	101.8	101.3
Commercial	14.4	20.1	23.9
Residential	29.7	32.1	30.5
Agriculture & Forestry	18.9	33.7	32.6
Not Specified	1.3	0.0	0.0
Total	**430.7**	**448.5**	**425.3**

Legend: MMT CO_2e = million metric tons of carbon dioxide equivalent.
Note: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.
Source: CARB, 2007; CARB, 2020d.

3.1.4.5 Regional GHG Emissions

Table 3.1-5 summarizes the sources and quantities of GHGs emitted within the City of San Diego for the Climate Action Plan baseline year of 2010 and the most recent year of data of 2019. Total citywide emissions in 2010 were about 13 MMT CO_2e. The largest source of emissions was transportation, followed by electricity, natural gas, solid waste and wastewater, and water treatment and distribution. The Climate Action Plan, in compliance with a CARB recommendation, sets a GHG reduction target of 15 percent below the 2010 baseline for 2020. The Climate Action Plan also includes GHG reduction targets of 40 percent below the baseline by 2030 and 50 percent below the baseline by 2035. To meet these goals, the city must implement strategies that reduce emissions to 11.0 MMT of CO_2e in 2020, 7.8 MMT of CO_2e in 2030, and 6.5 MMT of CO_2e in 2035. By meeting the 2020 and 2035 targets, the city will maintain its trajectory to meet its proportional share of the 2050 state GHG reduction target set by EO S-3-05. As shown in Table 3.1-5, the total citywide CO_2e emissions of 9.6 MMT in 2019 were 26 percent below 2010 levels and below the 2020 Climate Action Plan target of 11.0 MMT.

Table 3.1-5 City of San Diego GHG Emissions

Sector	*2010 Emissions (MMT CO_2e)*	*2019 Emissions (MMT CO_2e)*
Transportation	7.1	5.3
Electricity	3.1	2.1
Natural Gas	2.1	1.9
Solid Waste and Wastewater	0.4	0.3
Water Treatment and Distribution	0.3	0.1
Total	**13.0**	**9.6**

Legend: MMT CO_2e = million metric tons of carbon dioxide equivalent.
Note: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.
Source: City of San Diego, 2020.

3.1.4.6 Existing OTC Emissions

Operation of the existing OTC produces direct criteria air pollutant, HAP, and GHG emissions from a variety of sources, including employee and visitor vehicle trips; consumer products such as cleaning supplies (VOC only); architectural coating activities from periodic re-painting of buildings and parking lots (VOC only); industrial equipment such as forklifts, generator sets, and dedicated onsite vehicles; and natural gas use in buildings. OTC also intermittently tests two emergency standby diesel generators under SDAPCD air permits. OTC is also a direct source of GHGs from the use of refrigerants in air conditioning systems and an indirect source of GHGs from electricity use, water use and disposal, and solid waste disposal. Appendix D describes these emission sources in greater detail.

OTC emissions for year 2020 are based on facility operations data (R. Desmarais, The Marlin Alliance, Inc., personal communication, April 21, 2020) and estimates of vehicle trip generation from the project traffic analysis. These data were input into the California Emissions Estimator Model (CalEEMod) version 2016.3.2 to estimate existing OTC criteria air pollutant and GHG emissions (California Air Pollution Control Officers Association, 2016). CalEEMod is an emissions computer model that quantifies criteria pollutant and GHG emissions for a variety of land use types. Existing OTC HAPs emissions are based on source chemical speciation profiles obtained from the USEPA and CARB (USEPA, 2020b; CARB, 2020e). See Appendix D for the methods used to estimate existing OTC emissions. Tables 3.1-6 presents the existing annual criteria pollutant emissions projected for the OTC in 2020, which are considered the baseline emissions for the NEPA analysis. These data do not include a separate column for Pb, as the existing OTC is not a substantial source of this criteria pollutant. However, the combined HAPs column in Table 3.1-6 does include Pb emissions as one of the speciated HAPs. Table 3.1-7 presents the existing annual GHG emissions projected for the OTC in 2020.

Table 3.1-6 OTC Existing Annual Emission Estimates – 2020 (tons per year)

Source Type	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)*	*Combined HAPs*
Vehicle Trips	1.66	7.41	19.83	0.06	5.42	1.49	0.09	0.37
Consumer Products	3.91	--	--	--	--	--	0.18	0.45
Architectural Coating	0.39	--	--	--	--	--	0.02	0.09
Operational Equipment	0.21	1.82	1.67	0.00	0.13	0.12	0.06	0.11
Natural Gas Use	0.10	0.89	0.74	0.01	0.07	0.07	0.02	0.03
Total	**6.26**	**10.12**	**22.25**	**0.07**	**5.62**	**1.68**	**0.28**	**1.06**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = suspended particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 microns in diameter; HAPs = hazardous air pollutants; -- = source type does not emit that pollutant.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row. Values of 0.00 are greater than zero but less than 0.005 tons per year.

(1) The highest single HAPs are 2,2,4-trimethylpentane for vehicle trips; toluene for consumer products, architectural coating, and total; and formaldehyde for operational equipment and natural gas usage. The sum of the highest single HAPs by source type does not equal the "total" value because they correspond to different HAPs.

Table 3.1-7 OTC Existing Annual GHG Emission Estimates – 2020 (metric tons per year)

Source Type	*CO_2e*
Vehicle Trips	5,935
Operational Equipment	197
Natural Gas Use	971
Electricity Use	3,141
Water Use and Treatment	1,868
Solid Waste Disposal	370
Total	**12,482**

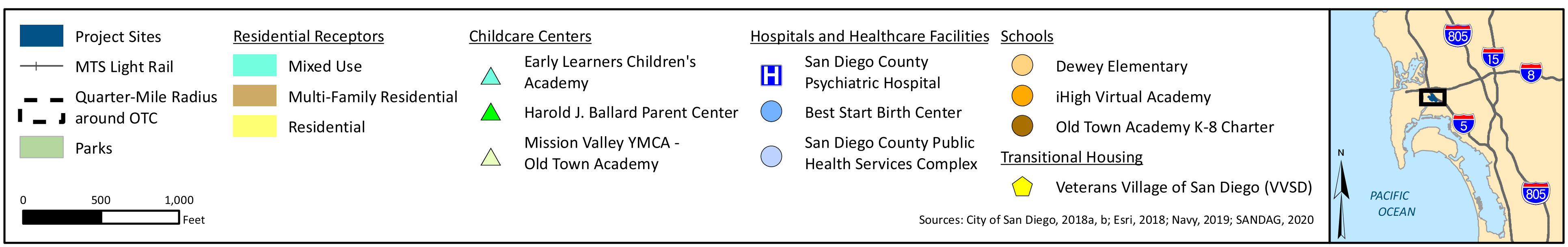
Legend: CO_2e = carbon dioxide equivalent.

3.1.4.7 Sensitive Receptors

The impact of air emissions on sensitive members of the population is a special concern. Sensitive receptor groups include children and infants, pregnant women, the elderly, and the acutely and chronically ill. Sensitive receptor locations typically include schools, childcare centers, elder care facilities, and hospitals. Sensitive individuals also could be present at any residence. Locations of sensitive receptors near OTC include the following, as depicted in Figure 3.1-1:

- Veterans Village of San Diego (transitional housing), about 100 feet southeast of OTC Site 1.
- The Best Start Birth Center, about 300 feet southwest of OTC Site 1 and directly southeast of OTC Site 2.
- Residences, about 300 feet east of OTC Site 1 on the east side of Interstate 5 and about 1,000 feet southwest of OTC Site 2.
- San Diego County public health services complex, about 350 feet northwest of OTC Site 1.
- Harold J. Ballard Parent Center (childcare and educational space), about 700 feet east of OTC Site 1, on the east side of Interstate 5.
- Dewey Elementary School, about 1,200 feet west of OTC Site 2.

Figure 3.1-1. Air Quality Sensitive Receptors



The NEPA analysis in this EIS considers the potential for HAPs emitted from the action alternatives to impact sensitive receptors in proximity to OTC.

3.1.4.8 Regional Health Risks from Toxic Air Contaminants – For CEQA Analysis in Appendix A

The SDAPCD's 2018 Air Toxics "Hot Spots" Program Report for San Diego County (SDAPCD, 2019) used measurements of ambient TAC concentrations taken at the El Cajon and Chula Vista monitoring stations to estimate cancer risks due to ambient air pollutants. Excluding DPM, the estimated cancer risks in 2018 at the locations of these monitoring stations were 356 excess cancer cases per one million people for Chula Vista and 389 cases per one million people for El Cajon. DPM was not included in this assessment due to the difficulty of distinguishing this multi-compound substance from monitored PM data. However, CARB estimated that the average excess cancer risk from DPM in California in 2014 was 460 cancer cases per one million people (down 68 percent from the 1990 risk of 1,600 cases in one million people) (SDAPCD, 2019).

3.1.5 Environmental Consequences

This section presents estimates of air quality impacts that could occur from implementation of the project alternatives. Effects on air quality are based on estimated direct and indirect emissions associated with a project alternative. The analysis considered NEPA impacts related to criteria pollutant emissions, ambient CO hot spots, HAP emissions, and GHG emissions. This section also includes a conformity applicability analysis for Alternative 1 (standalone Navy action) and Alternative 4 (Preferred Alternative). Appendix D includes detailed emissions inputs and calculation methods for each project alternative. Appendix A includes an evaluation of air quality impacts from Alternatives 4 and 5 based on CEQA Guidelines.

3.1.5.1 Significance Criteria

The analysis evaluated potential NEPA air quality impacts with respect to relevant environmental information, including regulations, guidelines, and scientific documentation. This section identifies the significance criteria used in the conformity applicability and NEPA impact analyses.

Conformity Applicability Analysis

The net changes in emissions for Alternative 1 and Alternative 4 were compared to the severe ozone conformity *de minimis* threshold of 25 tons per year of VOC or NO_x to determine if the General Conformity Rule applies to the action alternatives (see Section 3.1.3.1). If the net change in emissions from an action alternative does not exceed a *de minimis* threshold, then the action would be exempt from any further requirements under the General Conformity Rule. If the net change in emissions from an action alternative equals or exceeds a *de minimis* threshold, then a positive general conformity determination would be required before the action could generate such emissions.

NEPA Air Quality Analyses

Criteria Pollutants

In the case of criteria pollutants for which the ROI is in attainment of a NAAQS, the NEPA air quality analysis used the USEPA Prevention of Significant Deterioration major source emissions threshold of 250 tons per year of a criteria pollutant as an indicator of the significance of projected air quality impacts. This criterion was used because the Prevention of Significant Deterioration permitting process applies to areas that attain a NAAQS. If the intensity of a net emissions increase for a project alternative is below

250 tons per year of an attainment pollutant, the air quality impact for that pollutant would be less than significant. In the case of criteria pollutants for which the project region does not attain a NAAQS, the analysis compared the net increase in annual emissions from a project alternative to the applicable pollutant conformity *de minimis* thresholds. Therefore, for the ROI within the SDAB, the applicable NEPA analysis thresholds are:

- 25 tons per year of VOC or NO_x (based on the projected ozone nonattainment classification)
- 250 tons per year of CO, SO_2, PM_{10}, or $PM_{2.5}$

If the proposed emissions would exceed one of the above significance thresholds, further analysis was conducted to determine whether impacts would be significant. In such cases, if proposed emissions (1) would not contribute to an exceedance of an ambient air quality standard or (2) would conform to the approved SIP, then impacts would be less than significant.

Carbon Monoxide Hot Spots

Operation of land use development projects generally does not expose sensitive receptors to substantial local criteria air pollutant concentrations. This is because vehicle trips produce most of the emissions. Vehicles travel over a network of roadways and, therefore, disperse their emissions over a wide area instead of concentrating the emissions at a single location (Sacramento Metropolitan Air Quality Management District [SMAQMD], 2020).

One possible exception is CO “hot spots.” A CO hot spot is an area of local CO concentration that is caused by severe vehicle congestion on major roadways, particularly intersections. Although the SDAB is in attainment for CO, emissions from vehicular traffic generated by the proposed development potentially could cause a direct, local CO hot spot impact near intersections. Therefore, in addition to evaluating project emissions against the General Conformity and Prevention of Significant Deterioration significance thresholds, this analysis also considered the potential for project-generated vehicle trips to contribute to CO hot spots near intersections.

A CO hot spot would be considered significant if the CO concentration near the project-affected intersection would exceed the state’s 1-hour ambient air quality standard of 20 ppm or the state and federal 8-hour standard of 9.0 ppm. For context, Table 3.1-3 shows that the highest observed CO concentrations in the project area from 2017 to 2019 were 1.5 ppm for a 1-hour average and 1.4 ppm for an 8-hour average. These values are only 8 and 16 percent of their respective standards.

Hazardous Air Pollutants

The analysis used the CAA Section 112 major source threshold definition of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs as an indicator of the significance of projected human health impacts. If proposed construction or operations activities generate HAPs emissions that remain below these thresholds, then potential health impacts to the public would be less than significant.

Greenhouse Gases

The potential effects of proposed GHG emissions are by nature cumulative impacts because worldwide sources of GHGs contribute to global climate change. However, these global impacts would be manifested as impacts on resources and ecosystems in California. The CEQ submitted draft guidance entitled Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions (June 21, 2019) (CEQ, 2019), which was rescinded by EO 13990 in January 2021. This order directs the CEQ to update its final guidance entitled Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (81 Federal Register 51866, August 5, 2016). This guidance suggests that agencies should use estimated GHG emissions in NEPA analyses as a proxy for assessing potential effects on climate change. Therefore, this section presents estimates of GHGs that would occur from each project alternative and uses them as indicators of their potential contributions to climate change effects, as presented in Section 4.4, *Cumulative Impact Analysis*.

3.1.5.2 Approach to Analysis

This section describes the approaches for the conformity applicability analyses and for assessing NEPA impacts related to criteria pollutant emissions, CO hot spots, HAP exposures, and GHG emissions.

Conformity Applicability Analysis

The conformity applicability analysis for Alternative 1 and Alternative 4 relied on the emission calculations approach presented below for the NEPA criteria pollutant analysis. However, the analysis excluded certain indirect emissions evaluated in the NEPA analysis, as the Navy determined that (1) these emissions would not be practicably controllable and (2) the Navy would not have continuing program responsibility over them. The indirect emissions excluded from the conformity applicability analysis would occur from the following sources:

- Construction emissions from (1) offsite worker commuter vehicle trips and (2) offsite truck trips, except outbound one-way trips for hauling debris or soil offsite.
- Operational emissions from private development.
- Construction and operational sources that would require an air permit.

The analysis estimated annual conformity-related emissions for the following scenarios for each alternative:

- The attainment years specified in the SIP (2020 Ozone Plan) – 2026 and 2032.
- Any year that the applicable SIP specifies an emissions budget – 2023, 2026, 2029, and 2032.
- The year with the greatest annual project emissions.
- The project horizon year - 2050.

The analysis compared the annual conformity-related emissions for Alternative 1 and Alternative 4 to the severe ozone conformity *de minimis* thresholds to determine the applicability of the General Conformity Rule to the action alternatives. Appendix D, Attachment 3 presents the conformity-related emission calculations and Record of Non-Applicability for Alternative 1 and Alternative 4.

NEPA Air Quality Analyses

Criteria Pollutants

The air quality analysis estimated the magnitude of emissions that would occur from construction and operational activities due to each project alternative. Appendix D presents details of the analysis inputs and calculation methods.

<u>Construction</u>

Each action alternative (i.e., Alternatives 1 through 5) would require demolition and construction of buildings, infrastructure, and roadway systems internal to OTC. There would be no construction for the

No Action Alternative. Demolition and construction of each action alternative would produce direct criteria pollutant emissions from the following sources:

- Off-road construction equipment
- On-road vehicles associated with workers, vendors, and hauling
- Fugitive dust associated with grading, demolition, and the operation of vehicles on unpaved and paved surfaces (PM_{10} and $PM_{2.5}$ only)
- Architectural coating application (VOC only)
- Paving off-gassing from laying asphalt (VOC only)

The air quality analysis used CalEEMod version 2016.3.2 to quantify criteria pollutant emissions from proposed construction activities (California Air Pollution Control Officers Association, 2016). CalEEMod is a statewide program designed to calculate both construction and operational emissions from land use development projects in California. CalEEMod uses widely accepted emission calculation methods combined with default data that can be used if site-specific information is not available.

The analysis evaluated the following construction timelines to estimate annual construction emissions for each action alternative:

- Construction of the Navy development would occur from 2021 through 2025 for all action alternatives. While construction would not start as early as 2021, the analysis began with this year, as it would produce more conservative estimates of mobile source emissions.
- Construction of the private development would occur from 2026 through 2049 for Alternatives 2 through 5. There would be no private development for Alternative 1.
- Construction of the transit center would occur from 2026 through 2034 for Alternatives 4 and 5. There would be no transit center constructed for Alternatives 1, 2, or 3.

Inclusion of proposed management practices into proposed construction activities would reduce construction emissions. Section 3.1.5.9 presents the construction management practices proposed for air quality. The analysis included the effects of the following management practices in the estimated construction emissions for each action alternative:

- AQ MGMT-1 (Fugitive Dust Control Plan)
- AQ MGMT-3 (Tier 4 Construction Equipment)

All other proposed management practices for construction described in Section 3.1.5.9 were not quantified due to model limitations and uncertainty in the degree of implementation.

Operations

Operation of each project alternative would produce direct criteria pollutant emissions from the following sources:

- On-road vehicle traffic generated by the land uses. The analysis obtained vehicle trip rates and lengths developed in the EIS traffic study to assist in the estimation of emissions from vehicular traffic generated by the project alternatives (see Appendix E)
- Use of consumer products such as cleaning supplies, kitchen aerosols, cosmetics, toiletries, parking lot degreasers, fertilizers, and pesticides (VOC only)
- Architectural coating activities from periodic re-painting of buildings and parking lots (VOC only)
- Navy industrial equipment such as forklifts, onsite utility vehicles, and standby diesel generators

- Landscaping equipment
- Natural gas use in buildings

Appendix D describes the emission sources in greater detail.

The analysis used CalEEMod to quantify operational emissions of criteria pollutants for each project alternative for years 2026, 2030, 2035, and 2050. Table 3.1-8 provides the level of operations evaluated for the project alternatives for each analysis year. Because Alternatives 2 through 5 would have concurrent construction and operations activities, the analysis combined overlapping construction and operational emissions from these alternatives to produce total annual emissions. Appendix D Attachments 1.1 and 1.2 present emissions by analysis year and source category for each project alternative.

The analysis also modeled operation of the No Action Alternative for the same analysis years as the action alternatives. For all analysis years, the No Action Alternative would have the same land uses and number of vehicle trips as the existing conditions scenario (year 2020). The No Action Alternative served as the NEPA baseline for the evaluation of NEPA impacts for Alternatives 1 through 5. Therefore, the net changes in annual emissions that would result from the replacement of the No Action Alternative with an action alternative (i.e., action alternative minus the No Action Alternative) were compared to the emission thresholds identified above to determine the significance of each action alternative under NEPA. If the proposed emissions would exceed one of the significance thresholds, further analysis was conducted to determine whether impacts would be significant. In such cases, if proposed emissions (1) would not contribute to an exceedance of an ambient air quality standard or (2) would conform to the approved SIP, then impacts would be less than significant.

Table 3.1-8 Operational Analysis Years and Occupancy Assumptions for Alternatives 1 through 5

Analysis Year	*Assumptions for Navy Development*[1]	*Assumptions for Private Development*[2]
2026	First year of operation; assume 100 percent occupancy	No operation; 0 percent occupancy (under construction)
2030	Continued operation at 100 percent occupancy	Operation at 25 percent occupancy (continued construction)
2035	Continued operation at 100 percent occupancy	Operation at 45 percent occupancy (continued construction)
2050	Continued operation at 100 percent occupancy	Operation at 100 percent occupancy

Notes: (1) The assumptions for Navy Development apply to Alternatives 1 through 5.
(2) The assumptions for Private Development apply to Alternatives 2 through 5. Alternative 1 would have no Private Development.

Inclusion of design measures and management practices into the project alternatives would reduce operational emissions. Section 3.1.5.9 presents the operational management practices proposed for air quality. The analysis included the effects of the following management practices in the estimated operations emissions for each action alternative:

- AQ MGMT-12 (Tier 4 Operational Equipment)
- AQ MGMT-14 (Sustainable Landscape Design)

No other operational management practice described in Section 3.1.5.9 was quantified due to model limitations and uncertainties in the degree of implementation. However, the vehicle trip rates developed by the EIS traffic study (Appendix E) and used in the air quality analysis took into consideration some of the vehicle trip reduction techniques proposed in management practices AQ MGMT-23 through AQ MGMT-30 (such as transit, bicycle, and pedestrian measures).

The analysis summary tables that present estimates of emissions from proposed construction and operations activities do not include a separate column for Pb, as these activities would not be a substantial source of this criteria pollutant. However, the "combined HAPs" column in these tables includes Pb emissions as one of the speciated components of particulate matter.

It is probable that the analysis over-estimated exhaust emissions from proposed automobile and light-duty truck trips during both construction and operation at some point beyond year 2025. The EMFAC2014 module used by CalEEMod to estimate emissions from on-road vehicles assumes that only 15.7 percent of these vehicle fleets would be electric-powered in all future years beginning in 2025 (CARB, 2015). However, the effects of existing and future state GHG regulations and initiatives would likely produce higher percentages of electric-powered vehicles and resulting lower emissions from these fleets prior to the final project analysis year of 2050.

Carbon Monoxide Hot Spots

This analysis qualitatively evaluated the potential for CO hot spots near roadway intersections by using screening guidance published by the City of San Diego, Bay Area Air Quality Management District, and SMAQMD (City of San Diego, 2016b; Bay Area Air Quality Management District, 2017; SMAQMD, 2016). The City of San Diego guidelines indicate that a significant local CO impact could occur if a proposed development causes a four- or six-lane road to deteriorate to level of service (LOS) E or F. While the City of San Diego does not provide additional guidance on traffic volumes, other agencies in the state have provided estimates of traffic volumes that could result in a CO hot spot. The Bay Area Air Quality Management District's CEQA Guidelines suggest that a project would not cause a significant local CO impact if it would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (project plus background; sum of all four intersection legs). Furthermore, the SMAQMD screening criteria suggest that a project would not cause a significant local CO impact if it would not increase traffic volumes at affected intersections to more than 31,600 vehicles per hour. This analysis conservatively used the SMAQMD's lower screening threshold of 31,600 vehicles per hour (project plus background; sum of all four intersection legs) to determine the potential for project traffic to contribute to a CO hot spot. This high volume of vehicle traffic needed to cause a significant CO impact is a result of the substantial reductions in vehicle CO emissions that have occurred over the past several decades from the introduction of catalytic converters, reformulated fuels, more stringent exhaust standards, and advancements in engine technology.

Hazardous Air Pollutants

The air quality analysis used chemical speciation profiles obtained from the USEPA Speciate 5.1 model and CARB (USEPA, 2020b; CARB, 2020e) to estimate HAP emissions from proposed construction and operations activities. The analysis factored emissions of VOC and PM estimated for each activity with speciation profiles for total organic gases and PM to derive individual HAP emissions for each activity. The analysis used the amounts of HAP emissions emitted from the action alternatives as indicators of potential public health impacts. Appendix D presents details of the HAPs emissions analysis inputs and calculation methods.

Construction would require the use of arc welding, which is a source of HAPs, such as hexavalent chrome. Estimations of arc welding activities for construction of each action alternative are not available at this time. However, this activity would result in minor additions of HAPs from those estimated for construction of each action alternative.

This analysis also qualitatively evaluated the potential for sensitive receptors near OTC to be exposed to HAP emissions generated from construction and operations for each action alternative. Examples of sensitive receptor locations include childcare centers, schools, retirement homes, health care centers, and residences.

For Alternatives 2 through 5, the analysis also qualitatively evaluated the potential for future OTC residents to be exposed to HAP emissions from the Interstate 5 freeway and other adjacent land uses. This analysis assessed impacts by discussing potential source emission strengths and sensitive receptor locations as well as the potential effectiveness of the proposed management practices and design measures to minimize HAP exposures.

Greenhouse Gases

Construction of each action alternative would produce direct GHG emissions from fuel-burning equipment, including:

- Off-road construction equipment
- On-road vehicles associated with workers, vendors, and hauling

Operation of each project alternative would produce direct GHG emissions from the following sources:

- On-road vehicle traffic generated by the land uses
- Navy industrial equipment such as forklifts, onsite utility vehicles, and standby diesel generators
- Landscaping equipment
- Natural gas use in buildings
- Normal refrigerant leakage from cooling systems

Operation of each project alternative would produce indirect GHG emissions from the following sources:

- Onsite electricity usage
- Water use and disposal
- Solid waste disposal

The indirect GHG emissions would occur at sources owned or controlled by another organization (e.g., power plants, water and wastewater utilities, landfills).

The analysis used CalEEMod to quantify construction and operational emissions of GHGs for each project alternative. The same emission quantification approach described above for criteria pollutants was also used for GHGs. By convention, total construction GHG emissions were amortized over a 30-year period (i.e., divided by 30 years) and added to the annual operational GHG emissions for each analysis year (SCAQMD, 2009).

Section 3.1.5.9 presents proposed construction and operational management practices for each project alternative that would reduce GHG emissions. The analysis did not quantify the effects of management practices specific to GHG emissions because of quantification method limitations and uncertainty in the degree of implementation.

The existing OTC operates a variety of cooling systems with refrigerants that are potential sources of GHGs. The Navy maintains a refrigerant management plan for OTC to assist operators in managing the regulatory compliance of the equipment and to promote the use of refrigerants that have lower ozone depleting potentials or GWPs (Naval Base Point Loma, 2011). Information on the design and quantities of cooling systems that would operate under the future project alternatives did not exist at the time of this analysis. Therefore, this analysis did not quantify GHG emissions from refrigerant leakage. However, new systems would be more efficient and leak-resistant for refrigerants compared to the existing systems. Management practice AQ MGMT-13 also would help to minimize GHG emissions of refrigerants from future development (see Section 3.1.5.9).

Similar to the evaluation of criteria pollutant emissions, the analysis evaluated the net changes in annual GHG emissions that would result from the replacement of the No Action Alternative with an action alternative (i.e., action alternative minus the No Action Alternative). For context, the net changes in GHG emissions from each action alternative were compared to the most recent available year of statewide GHG emissions presented in Table 3.1.4.

3.1.5.3 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur and there would be no change to operational activities at the OTC. Therefore, implementation of the No Action Alternative would result in less than significant impacts to air quality.

Table 3.1-9 presents estimates of annual criteria pollutant, HAP, and GHG emissions that would occur from operation of the No Action Alternative for each modeled analysis year. Appendix D Attachment 1.2 presents the emissions in all other years from 2021 through 2049, which were estimated by linear interpolation between 2020 existing emissions and the modeled analysis years. Appendix D Attachment 1.2 also presents the emissions by source category for the modeled analysis years. Vehicle trips generated by OTC would be the largest contributor to all pollutant emissions except VOC. Use of consumer products (e.g., cleaning supplies, kitchen aerosols, cosmetics, toiletries, parking lot degreasers, fertilizers, and pesticides) would be the largest contributor to VOC and HAP emissions. The data in Table 3.1-9 show that the annual emissions of all pollutants would gradually decline over time. The declining emissions trend primarily would be due to the natural turnover with time of the OTC commuter vehicle fleet to vehicles meeting cleaner emission standards. As a result, the future No Action Alternative emissions would be less than OTC 2020 existing emissions for all pollutants (existing emissions are shown in Tables 3.1-6 and 3.1-8).

The No Action Alternative emissions shown in in Table 3.1-9 represent the NEPA baseline for operational emissions for each analysis year. The evaluation of operational emissions impacts for Alternatives 1 through 5 is based on the net change in emissions relative to the NEPA baseline.

Table 3.1-9 Annual Operational Emissions, No Action Alternative (tons/year)

Year	*VOC*	*NO$_x$*	*CO*	*SO$_x$*	*PM$_{10}$*	*PM$_{2.5}$*	*Highest Single HAP*(1)	*Combined HAPs*	*CO$_2$e* (MT/yr)
2026	5.63	6.59	15.26	0.06	5.10	1.48	0.26	0.90	10,673
2030	5.45	5.58	13.07	0.05	4.76	1.35	0.25	0.85	9,290
2035	5.29	5.25	11.42	0.05	4.47	1.27	0.24	0.82	8,867
2050	5.11	5.05	9.11	0.04	3.49	1.00	0.24	0.78	8,127

Legend: VOC = volatile organic compounds; NO$_x$ = nitrogen oxides; CO = carbon monoxide; SO$_x$ = sulfur oxides; PM$_{10}$ = particulate matter less than 10 microns in diameter; PM$_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; CO$_2$e = carbon dioxide equivalent; MT/yr = metric tons per year.

Note: (1) The highest single HAP would be toluene in all years.

3.1.5.4 Alternative 1: NAVWAR-only Redevelopment

Under Alternative 1, construction of the Navy facilities would occur from 2021 through 2025. Much of the construction would involve renovation of existing Buildings 2 and 3 on OTC Site 1. Building 1 and other obsolete facilities on OTC Site 1 would be demolished. No demolition or construction would occur on OTC Site 2. Full operation of OTC would begin in 2026. There would be no private development under Alternative 1.

Conformity Applicability Analysis

Table 3.1-10 presents estimates of annual conformity-related emissions that would occur from construction and operation of Alternative 1. These data show that the annual emissions from Alternative 1 in each conformity milestone year would be below the conformity *de minimis* threshold of 25 tons per year of VOCs or NO$_x$. Therefore, Alternative 1 would not be subject to the requirements of the General Conformity Rule. Appendix D, Attachment 3 presents the conformity-related emission calculations and Record of Non-Applicability for Alternative 1.

Table 3.1-10 Annual Conformity-Related Emissions, Alternative 1 (tons/year)

Year/Source Category(1)	*VOC*	*NO$_x$*
Year 2023(2)	-	-
Alternative 1 Construction	**0.15**	**0.78**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2026(3)	-	-
Alternative 1 Operations	7.27	6.91
No Action Alternative	5.63	6.58
Alternative 1 Net Change(4)	**1.65**	**0.33**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2029	-	-
Alternative 1 Operations	7.12	6.25
No Action Alternative	5.49	5.82
Alternative 1 Net Change	**1.63**	**0.43**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**

Year/Source Category[1]	*VOC*	*NO_x*
Year 2032	-	-
Alternative 1 Operations	7.00	5.89
No Action Alternative	5.38	5.43
Alternative 1 Net Change	**1.62**	**0.45**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2050	-	-
Alternative 1 Operations	6.69	5.46
No Action Alternative	5.10	5.03
Alternative 1 Net Change	**1.59**	**0.42**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Maximum Year[5]	-	-
Alternative 1 Construction	4.87	1.71
Alternative 1 Operations	--	--
Alternative 1 Total	--	--
No Action Alternative	--	--
Alternative 1 Net Change	**4.87**	**1.71**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; -- = not applicable.

Notes: (1) Construction emissions include all on-site emissions and outbound haul truck emissions. Operational emissions include all on-site emissions associated with operation of the Navy facilities except permitted stationary sources.

(2) Assumes no net change in operational emissions prior to 2026. Therefore, 2023 construction emissions were compared directly to the *de minimis* thresholds.

(3) Assumes there would be no construction in 2026 and beyond.

(4) Net change = Alternative 1 Total minus No Action Alternative.

(5) The maximum year is the year with the highest net change in emissions. Operational emissions in intermediate years were interpolated. The maximum years would be 2025 for VOC and 2021 for NOx, which only includes proposed construction.

NEPA Air Quality Analyses

Criteria Pollutants

Table 3.1-11 presents estimates of annual criteria pollutant emissions that would occur from construction of Alternative 1 and Table 3.1-12 presents estimates of maximum annual emissions by source type. Application of architectural coatings would be the largest contributor to VOC emissions. Off-road construction equipment exhaust would be the largest contributor to NO_x, CO, and SO_x emissions. Truck trips would also be a substantial contributor to NO_x emissions. Fugitive dust from demolition and the movement of equipment on bare soils would be the largest contributor to onsite PM_{10} and $PM_{2.5}$ emissions. Road dust from truck trips and worker vehicles would be the largest contributor to offsite PM_{10} and $PM_{2.5}$ emissions. The data in Tables 3.1-11 and 3.1-12 show the maximum annual construction emissions would be below the applicable annual significance thresholds for all pollutants. Therefore, construction of Alternative 1 would result in less than significant impacts to criteria pollutant levels.

Table 3.1-11 Annual Construction Emissions, Alternative 1 (tons/year)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP[(1)]*	*Combined HAPs*
2021	0.43	5.36	6.56	0.02	1.05	0.33	0.06	0.15
2022	0.56	5.16	7.73	0.03	1.02	0.31	0.07	0.19
2023	0.51	4.22	7.48	0.02	1.01	0.30	0.06	0.17
2024	0.49	4.18	7.37	0.02	1.02	0.30	0.06	0.17
2025	5.07	2.42	4.92	0.02	0.62	0.18	0.28	1.25
Maximum Annual Emissions[(2)]	**5.07**	**5.36**	**7.73**	**0.03**	**1.05**	**0.33**	**0.28**	**1.25**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

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

Notes: [(1)] The highest single HAPs would be formaldehyde in 2021-2024 and toluene in 2025.
[(2)] Maximum annual pollutant emissions do not all occur in the same year.

Table 3.1-12 Maximum Annual Construction Emissions by Source Category, Alternative 1 (tons/year)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP[(1)]*	*Combined HAPs*
Fugitive Dust	--	--	--	--	0.31	0.10	0.0003	0.001
Off-Road Equipment	0.15	0.70	4.62	0.01	0.03	0.03	0.04	0.08
Paving Off-Gas	0.04	--	--	--	--	--	0.005	0.01
Architectural Coating	4.74	--	--	--	--	--	0.27	1.14
Truck Trips	0.14	4.70	1.21	0.01	0.32	0.10	0.03	0.05
Worker Trips	0.28	0.19	2.00	0.01	0.70	0.19	0.02	0.06
All Source Categories[(2)]	**5.07**	**5.36**	**7.73**	**0.03**	**1.05**	**0.33**	0.**28**	**1.25**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; -- = source category does not emit that pollutant.

Notes: [(1)] The highest single HAPs would be manganese for fugitive dust; formaldehyde for off-road equipment and truck trips; benzene for paving off-gas; toluene for architectural coating and All Source Categories; and 2,2,4-trimethylpentane for worker trips.
[(2)] The All Source Categories emissions are less than the sum of the individual source category emissions because not all maximum individual source emissions would occur in the same year.

Although OTC would continue to operate during construction of Alternative 1, the analysis assumed that operational activities would remain at existing levels during the construction period. Therefore, operational emissions would not increase relative to the NEPA baseline during the construction period. As a result, the construction emissions in Table 3.1-11 also represent the net change in construction and operational emissions relative to the NEPA baseline.

Table 3.1-13 presents estimates of annual criteria pollutant emissions that would occur from operation of Alternative 1 for each analysis year. Appendix D Attachment 1.2 further subdivides operations emissions by source category for each of the action alternatives. Vehicle trips generated by OTC would be the largest contributor to all pollutant emissions except VOC. Use of consumer products would be the largest contributor to VOC emissions. For each analysis year, Table 3.1-13 compares the annual net changes in emissions from Alternative 1 to the applicable annual significance thresholds. The annual net changes in emissions would be below the thresholds for all pollutants in all analysis years. Therefore, Alternative 1 would result in less than significant impacts to criteria pollutant levels during all years of operation.

Table 3.1-13 Annual Operational Emissions, Alternative 1 (tons/year)

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP[1]*	*Combined HAPs*
Year 2026	-	-	-	-	-	-	-	-
Operation	7.27	6.91	17.27	0.06	5.63	1.62	0.34	1.13
NEPA Baseline[2]	5.63	6.59	15.26	0.06	5.10	1.48	0.26	0.90
Alternative 1 Net Change[3]	**1.64**	**0.31**	**2.01**	**0.007**	**0.53**	**0.14**	**0.08**	**0.24**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030	-	-	-	-	-	-	-	-
Operation	7.07	6.03	14.81	0.06	5.28	1.50	0.33	1.09
NEPA Baseline	5.45	5.58	13.07	0.05	4.76	1.35	0.25	0.85
Alternative 1 Net Change	**1.62**	**0.44**	**1.74**	**0.006**	**0.52**	**0.15**	**0.08**	**0.23**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2035	-	-	-	-	-	-	-	-
Operation	6.90	5.68	12.98	0.05	4.96	1.41	0.32	1.05
NEPA Baseline	5.29	5.25	11.42	0.05	4.47	1.27	0.24	0.82
Alternative 1 Net Change	**1.61**	**0.43**	**1.57**	**0.006**	**0.49**	**0.15**	**0.08**	**0.23**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2050	-	-	-	-	-	-	-	-
Operation	6.69	5.46	10.42	0.04	3.88	1.12	0.31	1.00
NEPA Baseline	5.11	5.05	9.11	0.04	3.49	1.00	0.24	0.78
Alternative 1 Net Change	**1.59**	**0.41**	**1.32**	**0.005**	**0.39**	**0.12**	**0.08**	**0.23**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Maximum Year[4]	-	-	-	-	-	-	-	-
Operation	7.27	6.03	17.27	0.06	5.63	1.50	0.34	1.13
NEPA Baseline	5.63	5.58	15.26	0.06	5.10	1.35	0.26	0.90
Alternative 1 Net Change	**1.64**	**0.44**	**2.01**	**0.007**	**0.53**	**0.15**	**0.08**	**0.24**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants, - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) The highest single HAP corresponding to the Net Change value would be toluene in all years.

(2) The NEPA Baseline is operation of the No Action Alternative in the designated analysis year.

(3) Alternative 1 Net Change = Alternative 1 minus NEPA Baseline.

(4) The year with the maximum net change in emissions was selected from all calendar years from 2026-2050. Emissions in intermediate years were interpolated. The maximum year would be 2026 for VOC, CO, SO_x, PM_{10}, highest single HAP, and combined HAPs; and 2030 for NO_x and $PM_{2.5}$.

Carbon Monoxide Hot Spots

Under Alternative 1, the project traffic study (see Appendix E) estimated that the intersection of Rosecrans Street and Sports Arena Boulevard would have the greatest peak hour traffic volume of all signalized study intersections. In 2050, this intersection would operate at LOS F. Table 3.1-14 shows that, with the inclusion of traffic generated from Alternative 1, the p.m. peak hour traffic volume would be 7,281 vehicles per hour. This volume is only 23 percent of the SMAQMD's screening threshold of 31,600 vehicles per hour. Therefore, operation of Alternative 1 would result in less than significant local CO impacts.

Table 3.1-14 CO Hot Spots Screening Analysis, Alternative 1

Alternative 1	***Analysis Value***
Highest hourly intersection traffic volume, Alternative 1	7,281 vehicles per hour[(1)]
Screening threshold for potential CO hot spots	31,600 vehicles per hour
Exceeds threshold?	No

Legend: CO = carbon monoxide.

Note: [(1)] The selected intersection is Rosecrans Street and Sports Arena Boulevard. The displayed volume is the sum of the 2050 p.m. peak hour volumes (project plus background) through all four intersection legs.

Hazardous Air Pollutants

Construction

Construction of Alternative 1 would generate HAP emissions from sources on OTC Site 1, such as off-road diesel-powered equipment and the application of architectural coatings, and offsite sources that include material truck and worker vehicle trips. Tables 3.1-11 and 3.1-12 show that for Alternative 1, peak annual emissions of combined HAPs would amount to 1.25 tons. Application of architectural coatings would be the largest source of HAPs from onsite construction. The highest annual emissions of an individual HAP would occur in the form of toluene and the peak year emissions would amount to 0.28 tons. Since HAPs emissions from the construction of Alternative 1 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs, HAP emissions associated with construction of Alternative 1 would result in less than significant health impacts to the public.

Emissions of HAPs from the construction of Alternative 1 would have the greatest potential to impact the health of sensitive receptors near OTC Site 1, where the largest amount of HAPs emissions would occur onsite. During construction of Alternative 1, the active construction areas within OTC Site 1 would periodically change as the construction sequence progresses. The transient nature of construction emissions would tend to disperse emissions and limit HAP exposure at any offsite location. HAP concentrations would decline rapidly with distance from the active construction areas.

Management practices proposed for Alternative 1 would minimize construction emissions of HAPs and their associated health impacts (see Section 3.1.5.9). For example, proposed management practice AQ MGMT-3 would require all off-road diesel-powered construction equipment greater than 50 horsepower to have the cleanest commercially available engines (USEPA Nonroad Final Tier 4 emission standards).

Appropriate asbestos abatement measures would be performed on identified asbestos materials prior to building demolition and in compliance with SDAPCD Rule 1206. The construction contractor also would be required to notify the SDAPCD in writing 10 days prior to any demolition whether asbestos is present or not. To ensure that construction of Alternative 1 would not generate significant levels of asbestos from demolition activities, proposed management practice AQ MGMT-2 would require the Navy to complete a demolition plan prior to the initiation of demolition (see Section 3.1.5.9).

Lead-containing paint exists in OTC buildings. To minimize potential health impacts during demolition activities, a construction contractor would manage the handling and removal of this material according to the measures outlined in Section 3.7, *Hazardous Materials and Wastes*.

Operations

Alternative 1 would include only Navy land uses. The onsite office uses and associated vehicle trips would not be substantial sources of HAP emissions. Use of consumer products (such as cleaners and solvents) would be the largest source of HAPs from the operation of Alternative 1. Operation of Alternative 1 also would include diesel standby generators and a small fleet of onsite mobile equipment to support warehouse operations. The standby generators would be subject to SDAPCD Rules and Regulations and would require SDAPCD operating permits. In addition, management practices proposed for Alternative 1 would minimize HAP emissions from the mobile equipment (see Section 3.1.5.9).

Table 3.1-13 shows that the peak net change in annual emissions of combined HAPs from the operation of Alternative 1 would amount to 0.24 tons. The highest annual net increase in emissions of an individual HAP would occur in the form of toluene and would amount to 0.08 tons. These emissions increases would be well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs. Therefore, HAP emissions associated with operation of Alternative 1 would result in less than significant health impacts to the public.

Greenhouse Gases

Table 3.1-15 presents estimates of annual GHG emissions that would occur from construction and operation of Alternative 1 by analysis year. Appendix D Attachment 1.2 further subdivides the operational emissions by source category for each of the action alternatives. Vehicle trips generated by OTC would be the largest contributor to the CO_2e emissions.

Table 3.1-15 Annual Construction and Operational GHG Emissions, Alternative 1

Year/Source Category	*CO_2e (MT/yr)*
Year 2026	-
Construction(1)	349
Operation	12,389
Alternative 1 Total	**12,738**
NEPA Baseline(2)	**10,673**
Alternative 1 Net Change(3)	**2,064**
Percent of 2018 California Inventory	**0.0005%**
Year 2030	-
Construction	349
Operation	10,806
Alternative 1 Total	**11,155**
NEPA Baseline	**9,290**
Alternative 1 Net Change	**1,866**
Percent of 2018 California Inventory	**0.0004%**
Year 2035	-
Construction	349
Operation	10,338

Year/Source Category	*CO_2e (MT/yr)*
Alternative 1 Total	**10,687**
NEPA Baseline	**8,867**
Alternative 1 Net Change	**1,820**
Percent of 2018 California Inventory	**0.0004%**
Year 2050	-
Construction	349
Operation	9,519
Alternative 1 Total	**9,868**
NEPA Baseline	**8,127**
Alternative 1 Net Change	**1,741**
Percent of 2018 California Inventory	**0.0004%**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; NEPA = National Environmental Policy Act; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) Construction emissions are amortized over 30 years.

(2) The NEPA Baseline is operation of the No Action Alternative in the designated analysis years.

(3) Alternative 1 Net Change = Alternative 1 Total minus NEPA Baseline.

For each analysis year, Table 3.1-15 shows the annual net change in emissions of Alternative 1 (i.e., Alternative 1 minus the No Action Alternative). The highest net increase of 2,064 metric tons per year of CO_2e would occur in the first operational analysis year, 2026. For all analysis years, CO_2e emissions from Alternative 1 would range from 0.0004 to 0.0005 percent of the statewide GHG emissions.

3.1.5.5 Alternative 2: Public-Private Development – NAVWAR and Higher Density

Under Alternative 2, construction of the Navy facilities would occur from 2021 through 2025 on OTC Site 2. Full operation of the Navy facilities would begin in 2026. Construction of private development would occur from 2026 through 2049 on OTC Site 1 and OTC Site 2. Operation of private development would ramp up according to the sequence presented above in Table 3.1-8.

NEPA Air Quality Analyses

Criteria Pollutants

Table 3.1-16 presents estimates of annual criteria pollutant emissions that would occur from construction of the Navy facilities as part of Alternative 2. The analysis assumed that construction of the Navy facilities would occur during years 2021 through 2025. These data show that annual emissions during this period would be below the applicable annual significance thresholds for all pollutants. Therefore, construction of the Navy facilities under Alternative 2 would result in less than significant impacts to criteria pollutant levels.

Table 3.1-16 Annual Construction Emissions for Years 2021-2025, Alternatives 2 through 5 (tons/year)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP[(1)]*	*Combined HAPs*
2021	1.15	3.69	14.88	0.04	2.25	0.66	0.07	0.30
2022	1.27	2.74	16.10	0.04	2.45	0.70	0.07	0.33
2023	1.20	2.51	15.59	0.04	2.44	0.70	0.07	0.31
2024	1.16	2.45	15.28	0.04	2.45	0.70	0.07	0.30
2025	4.13	2.04	12.88	0.03	2.11	0.60	0.21	1.01
Maximum Annual Emissions[(2)]	**4.13**	**3.69**	**16.10**	**0.04**	**2.45**	**0.70**	**0.21**	**1.01**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

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

Note: (1) The highest single HAPs would be formaldehyde in 2021-2024 and toluene in 2025.
(2) Maximum annual pollutant emissions do not all occur in the same year.

Although OTC would continue to operate during construction of Alternative 2, the analysis assumed that operational activities would remain at existing levels during construction of the Navy facilities (2021-2025). Therefore, operational emissions would not increase relative to the NEPA baseline during that period. As a result, the construction emissions in Table 3.1-16 also represent the net change in construction and operational emissions relative to the NEPA baseline.

Table 3.1-17 presents estimates of maximum annual emissions by source type that would occur during the entire construction period of Alternative 2. Application of architectural coatings would be the largest contributor to VOC emissions. Off-road construction equipment exhaust would be the largest contributor to NO_x, CO, and SO_x emissions. Fugitive dust from demolition and the movement of equipment on bare soils would be the largest contributor to onsite PM_{10} and $PM_{2.5}$ emissions. Road dust from truck trips and worker vehicles would be the largest contributor to offsite PM_{10} and $PM_{2.5}$ emissions.

Table 3.1-17 Maximum Annual Emissions by Source Category from all Construction Years, Alternative 2 (tons/year)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP[(1)]*	*Combined HAPs*
Fugitive Dust	--	--	--	--	0.96	0.23	0.001	0.002
Off-Road Equipment	0.39	2.01	14.19	0.03	0.06	0.06	0.11	0.19
Paving Off-Gas	0.03	--	--	--	--	--	0.004	0.03
Architectural Coating	3.18	--	--	--	--	--	0.18	0.76
Truck Trips	0.14	4.61	1.87	0.02	0.53	0.15	0.03	0.03
Worker Trips	0.96	0.66	6.74	0.02	2.36	0.64	0.05	0.21
All Source Categories[(2)]	**4.13**	**6.53**	**17.13**	**0.05**	**2.45**	**0.70**	**0.21**	**1.01**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; -- = source category does not emit that pollutant.

Notes: (1) The highest single HAPs would be manganese for fugitive dust; formaldehyde for off-road equipment and truck trips; benzene for paving off-gas; toluene for architectural coating and All Source Categories; and 2,2,4-trimethylpentane for worker trips.
(2) The All Source Categories emissions are less than the sum of the individual source category emissions because not all maximum individual source emissions would occur in the same year.

Table 3.1-18 presents estimates of annual criteria pollutant emissions for Alternative 2 that would occur from the year the newly constructed Navy facilities begin operating (2026) until the first year of operations after the completion of all construction (2050). The table also includes two intermediate analysis years (2030 and 2035) as well as the overall maximum year of emissions. The table shows both construction and operational emissions for each analysis year except 2050, when all construction would be complete, and the alternative would be operating at full capacity. Vehicle trips generated by the operation of Alternative 2 would be the largest contributor to all pollutant emissions except VOC. Use of consumer products would be the largest contributor to VOC emissions during operations.

For each year, Table 3.1-18 compares the annual net change in emissions of Alternative 2 (i.e., Alternative 2 minus the No Action Alternative) to the annual significance thresholds. These data show that the net emissions increases would be below the annual thresholds for all pollutants in all analysis years except VOC and NO_x. Therefore, Alternative 2 would result in less than significant impacts to CO, SO_2, PM_{10}, and $PM_{2.5}$ pollutant levels. Interpolation between analysis years estimated that the net increases in VOC and NO_x emissions from Alternative 2 would exceed the annual thresholds of 25 tons per year beginning in years 2043 and 2040, respectively (see Appendix D Attachments 1.1 and 1.2 for emissions interpolated by year). Therefore, the following provides further analysis of the significance of VOC and NOx emissions associated with Alternative 2 in terms of regional ozone impacts and local NO_2 impacts.

Table 3.1-18 Annual Construction and Operational Emissions for years 2026-2050, Alternative 2 (tons/year)

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)(2)*	*Combined HAPs*
Year 2026	-	-	-	-	-	-	-	-
Construction	0.54	5.26	12.07	0.04	1.91	0.52	0.10	0.22
Operation	4.40	4.05	9.53	0.04	3.26	0.95	0.20	0.67
Alternative 2 Total	4.94	9.31	21.60	0.07	5.17	1.47	0.22	0.89
NEPA Baseline(3)	5.63	6.59	15.26	0.06	5.10	1.48	0.26	0.90
Alternative 2 Net Change(4)	**-0.69**	**2.72**	**6.34**	**0.02**	**0.07**	**-0.01**	**0.07**	**-0.01**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030	-	-	-	-	-	-	-	-
Construction	2.06	5.75	16.94	0.05	1.39	0.42	0.14	0.61
Operation	13.09	13.14	28.37	0.11	10.67	3.01	0.60	2.00
Alternative 2 Total	15.15	18.89	45.31	0.16	12.07	3.44	0.70	2.61
NEPA Baseline	5.45	5.58	13.07	0.05	4.76	1.35	0.25	0.85
Alternative 2 Net Change	**9.70**	**13.30**	**32.24**	**0.11**	**7.31**	**2.09**	**0.45**	**1.76**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2035	-	-	-	-	-	-	-	-
Construction	2.00	6.53	17.13	0.05	1.49	0.46	0.14	0.60
Operation	19.41	19.65	38.09	0.15	15.67	4.40	0.89	2.92
Alternative 2 Total	21.41	26.18	55.22	0.21	17.16	4.86	0.99	3.52
NEPA Baseline	5.29	5.25	11.42	0.05	4.47	1.27	0.24	0.82

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)(2)*	*Combined HAPs*
Alternative 2 Net Change	**16.12**	**20.93**	**43.80**	**0.16**	**12.69**	**3.59**	**0.75**	**2.70**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2050	-	-	-	-	-	-	-	-
Alternative 2 Total(5)	36.23	38.49	56.75	0.24	23.12	6.53	1.68	5.32
NEPA Baseline	5.11	5.05	9.11	0.04	3.49	1.00	0.24	0.78
Alternative 2 Net Change	**31.13**	**33.44**	**47.64**	**0.20**	**19.63**	**5.54**	**1.44**	**4.54**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**
Maximum Year(6)	-	-	-	-	-	-	-	-
Construction	1.77	4.82	15.84	0.04	0.94	0.27	0.09	0.50
Operation	35.11	35.97	54.26	0.23	22.63	6.39	1.63	5.16
Alternative 2 Total	36.88	40.80	70.10	0.27	23.56	6.67	1.72	5.66
NEPA Baseline	5.12	5.07	9.41	0.04	3.56	1.02	0.24	0.78
Alternative 2 Net Change	**31.76**	**35.73**	**60.69**	**0.23**	**20.01**	**5.65**	**1.48**	**4.89**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) The displayed construction and operation values often correspond to different HAPs, and therefore do not always sum to equal the Alternative 2 Total value. Similarly, the displayed Alternative 2 Total and NEPA Baseline values sometimes corresponds to different HAPs than the Alternative 2 Net Change value, and therefore the former two values do not always subtract to equal the latter value.

(2) The highest single HAPs corresponding to the Alternative 2 Net Change values would be formaldehyde in 2026 and toluene in all other years.

(3) The NEPA Baseline is operation of the No Action Alternative in the designated analysis year.

(4) Alternative 2 Net Change = Alternative 2 minus NEPA Baseline.

(5) Total emissions in 2050 only includes operational emissions because construction would be complete.

(6) The year with the maximum net change in emissions was selected from all calendar years from 2026-2050. Emissions in intermediate years were interpolated. The maximum year would be 2049 for VOC, PM_{10}, $PM_{2.5}$, highest single HAP, and combined HAPs; and 2048 for NO_x, CO, and SO_x.

Regarding potential impacts to ambient ozone from Alternative 2, the *2020 Ozone Plan* evaluated emissions of VOC and NO_x due to planned or new Navy projects in San Diego County. The photochemical modeling analyses in the *2020 Ozone Plan* evaluated a growth projection of 1.08 and 8.34 tons per day of VOC and NO_x emissions, respectively, for combined Navy/U.S. Marine Corps projects (See *2020 Ozone Plan* page 18) (SDAPCD, 2020b). This growth projection included construction of the OTC project (the Plan assumed 94 and 193 tons of VOC and NO_x emissions over the entire construction period) (Naval Facilities Engineering Systems Command [NAVFAC] Southwest, 2018). The modeling analyses did not specifically evaluate operational emissions from the OTC project. The results of the modeling analyses in the *2020 Ozone Plan* showed that the contribution of VOC and NO_x emissions from future Navy projects in San Diego County would result in slightly higher ozone concentrations but no additional ozone standard exceedances. For comparison, construction and operation of Alternative 2 would emit a maximum of 0.10 and 0.11 tons per day of VOC and NO_x emissions (or 31.76 and 35.73 tons per year of VOC and NO_x emissions, as shown in Table 3.1-18), which equates to 8.1 and 1.2 percent of the growth projections evaluated for new Navy projects in the *2020 Ozone Plan*. These new emissions from Alternative 2 would fit within the growth projections evaluated for future Navy projects in the *2020 Ozone Plan* and therefore would not contribute to an exceedance of an ozone standard.

Regarding potential impacts to ambient NO_2 from Alternative 2, most NO_x emissions from construction and operation of Alternative 2 would occur from vehicles that would operate on roadways within several miles of OTC. The transient nature of these emissions and their release over such a large area would disperse their ambient concentrations to low levels. In combination with background levels of NO_2, which are well below the ambient air quality standards (see Table 3.1-3), NO_x emissions from Alternative 2 would not contribute to an exceedance of an ambient NO_2 standard. In conclusion, Alternative 2 would result in less than significant impacts to criteria pollutant levels.

Potential Mitigation Measures

To ensure that VOC and NO_x emissions from combined construction and operation of Alternative 2 would produce less than significant impacts, the Navy has identified the following potential mitigation measure:

- AQ MIT-1. Within six months of the completion of the OTC EIS ROD and every three years thereafter until buildout, the Navy shall provide SANDAG with population and employment projections for OTC to assist SANDAG in updating its regional growth projections. Upon SDAPCD request, the Navy shall report an accounting of new project emissions that would occur within San Diego County to demonstrate that these emissions do not exceed the Navy/U.S. Marine Corps emissions growth projections identified in the *2020 Ozone Plan* (1.08 and 8.34 tons per day of VOC and NO_x).

Implementation of AQ MIT-1 would ensure that future Navy/U.S. Marine Corps projects would be consistent with their emissions growth projections identified in the San Diego County ozone plans.

Carbon Monoxide Hot Spots

Under Alternative 2, the project traffic study (see Appendix E) estimated that the intersection of Rosecrans Street and Sports Arena Boulevard would have the greatest peak hour traffic volume of all signalized study intersections. In 2050, this intersection would operate at LOS F. With the inclusion of traffic generated from Alternative 2, the p.m. peak hour traffic volume would be 8,079 vehicles per hour (Table 3.1-19). This volume is only 26 percent of the SMAQMD's screening threshold of 31,600 vehicles per hour. Therefore, operation of Alternative 2 would result in less than significant local CO impacts.

Table 3.1-19 CO Hot Spots Screening Analysis, Alternative 2

Alternative 2	*Analysis Value*
Highest hourly intersection traffic volume, Alternative 2	8,079 vehicles per hour(1)
Screening threshold for potential CO hot spots	31,600 vehicles per hour
Exceeds threshold?	No

Legend: CO = carbon monoxide.
Note: (1) The selected intersection is Rosecrans Street and Sports Arena Boulevard. The displayed volume is the sum of the 2050 p.m. peak hour volumes (project plus background) through all four intersection legs.

Hazardous Air Pollutants

Construction

Construction of Alternative 2 would generate HAP emissions from sources on OTC Site 1 and OTC Site 2, such as off-road diesel-powered equipment and the application of architectural coatings, and offsite sources that include material truck and worker vehicle trips. Table 3.1-17 shows that for Alternative 2, peak annual emissions of combined HAPs would amount to 1.01 tons. Application of architectural coatings would be the largest source of HAPs from onsite construction. The highest annual emissions of an individual HAP would occur in the form of toluene and would amount to 0.21 tons. Since HAPs emissions from the construction of Alternative 2 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs, construction of Alternative 2 would result in less than significant health impacts to the public.

Emissions of HAPs from the construction of Alternative 2 would have the greatest potential to impact the health of sensitive receptors near OTC, where the largest amount of HAPs emissions would occur onsite. During construction of Alternative 2, the active construction areas within OTC Site 1 and OTC Site 2 would periodically change as the construction sequence progresses. The transient nature of construction emissions would tend to disperse emissions and limit HAP exposure at any offsite location. HAP concentrations would decline rapidly with distance from the active construction areas.

Management practices proposed for Alternative 2 would minimize construction emissions of HAPs and their associated health impacts (see Section 3.1.5.9). For example, proposed management measure AQ MGMT-3 would require all off-road diesel-powered construction equipment greater than 50 horsepower to have the cleanest commercially available engines (USEPA Nonroad Final Tier 4 emission standards).

To ensure that construction of Alternative 2 would not generate significant levels of asbestos emissions from demolition activities, proposed management practice AQ MGMT-2 (see Section 3.1.5.9) would require the Navy to complete a demolition plan prior to the initiation of demolition. A construction contractor would manage the handling and removal of hazardous materials according to the measures outlined in Section 3.7, *Hazardous Materials and Wastes*.

Operations

Alternative 2 would include the development of residential, commercial, and Navy land uses. Residential land uses do not typically generate substantial HAP emissions. Commercial land uses could potentially include stationary sources of HAPs such as dry-cleaning establishments or emergency standby generators. Alternative 2 does not identify specific commercial facilities that would be sources of HAPs (see description in Section 2.3.4, *Alternative 2*), so the analysis did not evaluate HAP emissions from this land use type. Sources of HAPs from Navy land uses would include diesel standby generators, a small fleet of onsite mobile equipment to support warehouse operations, and consumer products.

Table 3.1-18 shows that the peak net change in annual emissions of combined HAPs from construction and operation of Alternative 2 would amount to 4.89 tons. Use of consumer products (such as cleaners and solvents) would be the largest source of HAPs from operations. The highest annual net increase of an individual HAP would occur in the form of toluene and would amount to 1.48 tons. These net increases in HAPs emissions would be well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs. Therefore, HAP emissions associated with construction and operation of Alternative 2 would result in less than significant health impacts to the public.

Stationary sources associated with this alternative would be subject to SDAPCD Rules and Regulations and would require SDAPCD operating permits. In addition, management practices proposed for Alternative 2 would minimize HAP emissions during operations (see Section 3.1.5.9). Therefore, HAP emissions associated with operation of Alternative 2 would result in less than significant health impacts to the public.

This analysis also considered the potential for future OTC residents to be exposed to HAP emissions from external nearby emission sources such as the Interstate 5 freeway and existing businesses near OTC. In addition to Interstate 5, there are existing commercial land uses near OTC that emit HAPs, including auto body shops and gas stations. CARB developed the *Air Quality and Land Use Handbook: A Community Health Perspective* to provide guidance on land use compatibility with sources of TACs (CARB, 2005). The handbook makes recommendations to protect sensitive land uses from air pollutant emissions while balancing numerous other land use issues (e.g., housing, transportation needs, economics). The recommendations relevant to this alternative include:

- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
- Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation.
- Avoid siting new sensitive land uses within 300 feet of a large gas station (3.6 million gallons per year or greater) or within 50 feet of a typical gas station.

CARB issued supplemental guidance in 2017 with additional strategies that could apply to the Alternative design (CARB, 2017a; CARB, 2017b):

- Design buildings with varying shapes and heights, building articulations (street frontage design elements like edges and corners that help break up building mass), and open spaces between buildings to encourage air flow.
- Include solid barriers, such as sound walls, or dense vegetation barriers along freeways to reduce leeward pollutant concentrations.
- Install indoor high-efficiency air filtration.
- Separate pedestrian walkways from streets and intersections expected to have substantial on-road traffic.
- Site bus stops away from major on-road sources and intersections.

To reduce the exposure of future OTC residents to pollutants emitted from external sources, the strategies identified in the preceding bullets are part of management practices AQ MGMT-15 (Air Filtration) and AQ MGMT-16 (External Source Exposure Reduction).

Because more than one-half of OTC Site 1 is within 500 feet of Interstate 5, strict adherence to the first CARB recommendation is not feasible for this alternative. However, CARB notes that its recommendations are advisory and should not be interpreted as defined buffer zones, and that projects must balance other considerations such as transportation needs, the benefits of urban infill, community economic development priorities, and other quality-of-life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, CARB's position is that infill development, mixed use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.

Consistent with the goals of CARB's handbook, Alternative 2 would support infill, mixed-use, higher density, and transit-oriented development that would benefit regional air quality. Additionally, the operational design measures would minimize exposure of future OTC residents to external sources of HAPs. Therefore, operation of Alternative 2 would result in less than significant HAP impacts to future OTC residents.

Greenhouse Gases

Table 3.1-20 presents estimates of annual GHG emissions that would occur from construction and operation of Alternative 2 by analysis year. Vehicle trips generated by OTC would be the largest contributor to the CO_2e emissions.

For each analysis year, Table 3.1-20 shows the annual net change in emissions of Alternative 2 (i.e., Alternative 2 minus the No Action Alternative). The highest net increase of 37,306 metric tons per year of CO_2e would occur in the buildout year of 2050. For all analysis years, CO_2e emissions from Alternative 2 would range from 0.0003 to 0.009 percent of the statewide GHG emissions.

Table 3.1-20 Annual Construction and Operational GHG Emissions, Alternative 2

Year/Source Category	*CO_2e (MT/yr)*
Year 2026	-
Construction(1)	3,451
Operation	8,338
Alternative 2 Total	**11,788**
NEPA Baseline(2)	**10,673**
Alternative 2 Net Change(3)	**1,115**
Percent of 2018 California Inventory	**0.0003%**
Year 2030	-
Construction	3,451
Operation	18,213
Alternative 2 Total	**21,664**
NEPA Baseline	**9,290**
Alternative 2 Net Change	**12,374**
Percent of 2018 California Inventory	**0.003%**
Year 2035	-
Construction	3,451
Operation	25,444
Alternative 2 Total	**28,895**
NEPA Baseline	**8,867**
Alternative 2 Net Change	**20,028**
Percent of 2018 California Inventory	**0.005%**

Year/Source Category	*CO_2e (MT/yr)*
Year 2050	-
Construction	3,451
Operation	41,983
Alternative 2 Total	**45,433**
NEPA Baseline	**8,127**
Alternative 2 Net Change	**37,306**
Percent of 2018 California Inventory	**0.009%**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; NEPA = National Environmental Policy Act; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.
(1) Construction emissions are amortized over 30 years.
(2) The NEPA baseline is the No Action Alternative. The NEPA baseline for years 2030, 2035, and 2050 reflects the No Action Alternative under future year conditions.
(3) Alternative 2 Net Change = Alternative 2 Total minus NEPA Baseline.

3.1.5.6 Alternative 3: Public-Private Development – NAVWAR and Lower Density Mixed Use

The timelines for construction and operation of Alternative 3 are the same as described for Alternative 2.

NEPA Air Quality Analyses

Criteria Pollutants

Table 3.1-16 presents estimates of annual criteria pollutant emissions that would occur from construction of the Navy facilities as part of Alternative 3. These data show that annual emissions during this period would be below the applicable annual significance thresholds for all pollutants. Therefore, construction of the Navy facilities under Alternative 3 would result in less than significant impacts to criteria pollutant levels.

Although OTC would continue to operate during construction of Alternative 3, the analysis assumed that operational activities would remain at existing levels during construction of the Navy facilities. Therefore, operational emissions would not increase relative to the NEPA baseline during that period. As a result, the construction emissions in Table 3.1-16 also represent the net change in construction and operational emissions relative to the NEPA baseline.

Table 3.1-21 presents estimates of maximum annual emissions by source type that would occur during the entire construction period of Alternative 3. The main activities contributing to the emissions are the same as described for Alternative 2.

Table 3.1-21 Maximum Annual Emissions from all Construction Years by Source Category, Alternative 3 (tons/year)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP[1]*	*Combined HAPs*
Fugitive Dust	--	--	--	--	0.96	0.23	0.001	0.002
Off-Road Equipment	0.29	1.40	10.65	0.02	0.05	0.05	0.08	0.15
Paving Off-Gas	0.04	--	--	--	--	--	0.004	0.01
Architectural Coating	3.18	--	--	--	--	--	0.18	0.76
Truck Trips	0.12	3.98	1.67	0.02	0.47	0.14	0.02	0.04
Worker Trips	0.96	0.66	6.74	0.02	2.36	0.64	0.05	0.21
All Source Categories[2]	**4.13**	**5.39**	**16.10**	**0.04**	**2.45**	**0.70**	**0.21**	**1.01**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; -- cell means that the source type does not emit that pollutant.

Notes: [1] The highest single HAPs would be manganese for fugitive dust; formaldehyde for off-road equipment and truck trips; benzene for paving off-gas; toluene for architectural coating and All Source Categories; and 2,2,4-trimethylpentane for worker trips.

[2] The All Source Categories emissions are less than the sum of the individual source category emissions because not all maximum individual source emissions would occur in the same year.

Table 3.1-22 presents estimates of annual criteria pollutant emissions for Alternative 3 that would occur from the year the newly constructed Navy facilities would begin operating (2026) until the first year of operations after the completion of all construction (2050). The table also includes two intermediate analysis years (2030 and 2035) as well as the overall maximum year of emissions. The table shows both construction and operational emissions for each analysis year except 2050, when all construction would be complete, and the alternative would be operating at full capacity. Vehicle trips generated by the operation of Alternative 3 would be the largest contributor to all pollutant emissions except VOC. Use of consumer products would be the largest contributor to VOC emissions during operations.

Table 3.1-22 Annual Construction and Operational Emissions for years 2026-2050, Alternative 3 (tons/year)

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP[1][2]*	*Combined HAPs*
Year 2026	-	-	-	-	-	-	-	-
Construction	0.41	4.45	9.25	0.03	1.70	0.45	0.08	0.17
Operation	4.40	4.05	9.53	0.04	3.26	0.95	0.20	0.67
Alternative 3 Total	4.81	8.51	18.78	0.07	4.96	1.40	0.21	0.83
NEPA Baseline[3]	5.63	6.59	15.26	0.06	5.10	1.48	0.26	0.90
Alternative 3 Net Change[4]	**-0.82**	**1.91**	**3.52**	**0.01**	**-0.14**	**-0.08**	**0.05**	**-0.06**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030	-	-	-	-	-	-	-	-
Construction	1.40	4.31	11.83	0.03	1.00	0.30	0.10	0.42
Operation	10.19	10.11	22.15	0.09	8.38	2.37	0.47	1.55
Alternative 3 Total	11.59	14.42	33.98	0.12	9.38	2.67	0.53	1.97
NEPA Baseline	5.45	5.58	13.07	0.05	4.76	1.35	0.25	0.85

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)(2)*	*Combined HAPs*
Alternative 3 Net Change	**6.14**	**8.84**	**20.91**	**0.07**	**4.62**	**1.32**	**0.29**	**1.12**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2035	-	-	-	-	-	-	-	-
Construction	1.39	5.39	13.06	0.04	1.16	0.36	0.11	0.43
Operation	14.39	14.47	28.57	0.12	11.82	3.32	0.66	2.16
Alternative 3 Total	15.79	19.86	41.63	0.16	12.98	3.68	0.73	2.59
NEPA Baseline	5.29	5.25	11.42	0.05	4.47	1.27	0.24	0.82
Alternative 3 Net Change	**10.49**	**14.62**	**30.21**	**0.11**	**8.51**	**2.42**	**0.49**	**1.77**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2050	-	-	-	-	-	-	-	-
Alternative 3 Total(5)	25.69	27.57	42.74	0.18	18.07	5.09	1.19	3.79
NEPA Baseline	5.11	5.05	9.11	0.04	3.49	1.00	0.24	0.78
Alternative 3 Net Change	**20.58**	**22.52**	**33.63**	**0.15**	**14.58**	**4.09**	**0.95**	**3.01**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Maximum Year(6)	-	-	-	-	-	-	**-**	-
Construction	1.20	3.37	10.60	0.03	0.64	0.19	0.06	0.34
Operation	24.94	25.82	40.85	0.17	17.66	4.97	1.15	3.68
Alternative 3 Total	26.14	29.19	51.45	0.20	18.29	5.16	1.21	4.02
NEPA Baseline	5.12	5.07	9.41	0.04	3.56	1.02	0.24	0.78
Alternative 3 Net Change	**21.02**	**24.12**	**42.04**	**0.16**	**14.73**	**4.14**	**0.98**	**3.24**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) The displayed construction and operation values often correspond to different HAPs, and therefore do not always sum to equal the Alternative 3 Total value. Similarly, the displayed Alternative 3 Total and NEPA Baseline values sometimes corresponds to different HAPs than the Alternative 3 Net Change value, and therefore the former two values do not always subtract to equal the latter value.

(2) The highest single HAPs corresponding to the Alternative 3 Net Change values would be formaldehyde in 2026 and toluene in all other years.

(3) The NEPA Baseline is operation of the No Action Alternative in the designated analysis year.

(4) Alternative 3 Net Change = Alternative 3 minus NEPA Baseline.

(5) Total emissions in 2050 only includes operational emissions because construction would be complete.

(6) The year with the maximum net change in emissions was selected from all calendar years from 2026-2050. Emissions in intermediate years were interpolated. The maximum year would be 2049 for VOC, PM_{10}, $PM_{2.5}$, highest single HAP, and combined HAPs; and 2048 for NO_x, CO, and SO_x.

For each year, Table 3.1-22 compares the annual net change in emissions of Alternative 3 (i.e., Alternative 3 minus the No Action Alternative) to the annual significance thresholds. These data show that the net emissions increases would be below the annual thresholds for all pollutants in all analysis years. Therefore, Alternative 3 would result in less than significant impacts to criteria pollutant levels.

Carbon Monoxide Hot Spots

Under Alternative 3, the project traffic study (see Appendix E) estimated that the intersection of Rosecrans Street and Sports Arena Boulevard would have the greatest peak hour traffic volume of all signalized study intersections. In 2050, this intersection would operate at LOS F. With the inclusion of traffic generated from Alternative 3, the p.m. peak hour traffic volume would be 7,813 vehicles per hour (Table 3.1-23). This volume is only 25 percent of the SMAQMD's screening threshold of 31,600 vehicles per hour. Therefore, operation of Alternative 3 would result in less than significant local CO impacts.

Table 3.1-23 CO Hot Spots Screening Analysis, Alternative 3

Alternative 3	*Analysis Value*
Highest hourly intersection traffic volume, Alternative 3	7,813 vehicles per hour(1)
Screening threshold for potential CO hot spots	31,600 vehicles per hour
Exceeds threshold?	No

Legend: CO = carbon monoxide.
Note: (1) The selected intersection is Rosecrans Street and Sports Arena Boulevard. The displayed volume is the sum of the 2050 p.m. peak hour volumes (project plus background) through all four intersection legs.

Hazardous Air Pollutants

<u>Construction</u>

Construction of Alternative 3 would generate HAP emissions from the same sources as described for Alternative 2. The application of architectural coatings would be the largest source of HAPs from onsite construction. Table 3.1-21 shows that for Alternative 3, peak annual emissions of combined HAPs would amount to 1.01 tons. The highest annual emissions of an individual HAP would occur in the form of toluene and would amount to 0.21 tons. Since HAPs emissions from the construction of Alternative 3 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs, construction of Alternative 3 would result in less than significant health impacts to the public.

Emissions of HAPs within the active construction areas of OTC Site 1 and OTC Site 2 would periodically change as the construction sequence progresses, as described for Alternative 2. The transient nature of construction emissions would tend to disperse emissions and to limit HAP exposure at any offsite location. HAP concentrations would decline rapidly with distance from the active construction areas.

Management practices proposed for Alternative 3 would minimize construction emissions of HAPs and their associated health impacts (see Section 3.1.5.9). Like Alternative 2, management practice AQ MGMT-2 (see Section 3.1.5.9) would be implemented to avoid generating significant levels of asbestos emissions during demolition.

<u>Operations</u>

Alternative 3 would include the same land uses as described under Alternative 2. As the description of Alternative 3 does not identify specific commercial facilities that would be sources of HAPs (see description in Section 2.3.5, *Alternative 3*), the analysis did not evaluate HAP emissions from this land use type. Sources of HAPs from Navy land uses are the same as described for Alternative 2.

Table 3.1-22 shows that the peak net change in annual emissions of combined HAPs from construction and operation of Alternative 3 would amount to 3.24 tons. Use of consumer products (such as cleaners and solvents) would be the largest source of HAPs from operations. The highest annual net increase of an individual HAP would occur in the form of toluene and would amount to 0.98 tons. These net increases in HAPs emissions would be well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs. Therefore, HAP emissions associated with construction and operation of Alternative 3 would result in less than significant health impacts to the public.

Stationary sources associated with this alternative would be subject to SDAPCD Rules and Regulations and would require SDAPCD operating permits. In addition, management practices proposed for Alternative 3 would minimize HAP emissions during operations (see Section 3.1.5.9). Therefore, HAP emissions associated with operation of Alternative 3 would result in less than significant health impacts to sensitive receptors.

As described under Alternative 2, this analysis also considered the potential for future OTC residents to be exposed to HAP emissions from external nearby emissions sources such as the Interstate 5 freeway and existing businesses near OTC. Consistent with the goals of CARB's Air Quality and Land Use Handbook, Alternative 3 would support infill, mixed-use, higher density, and transit-oriented development that would benefit regional air quality. Additionally, the operational design measures proposed for Alternative 3 (see Section 3.1.5.9) would minimize exposure of future OTC residents to external sources of HAPs. Therefore, operation of Alternative 3 would result in less than significant HAP impacts to future OTC residents.

Greenhouse Gases

Table 3.1-24 presents estimates of annual GHG emissions that would occur from construction and operation of Alternative 3 by analysis year. Vehicle trips generated by OTC would be the largest contributor to the CO_2e emissions. For each analysis year, Table 3.1-24 shows the annual net change in emissions of Alternative 3 (i.e., Alternative 3 minus the No Action Alternative). The highest net increase of 25,875 metric tons per year of CO_2e would occur in the buildout year of 2050. For all analysis years, CO_2e emissions from Alternative 3 would range from 0.0001 to 0.002 percent of the statewide GHG emissions.

Table 3.1-24 Annual Construction and Operational GHG Emissions, Alternative 3

Year/Source Category	*CO_2e (MT/yr)*
Year 2026	-
Construction(1)	2,564
Operation	8,338
Alternative 3 Total	**10,901**
NEPA Baseline(2)	**10,673**
Alternative 3 Net Change(3)	**228**
Percent of 2018 California Inventory	**0.0001%**
Year 2030	-
Construction	2,564
Operation	14,722
Alternative 3 Total	**17,286**
NEPA Baseline	**9,290**

Year/Source Category	CO_2e (MT/yr)
Alternative 3 Net Change	**7,996**
Percent of 2018 California Inventory	**0.002%**
Year 2035	-
Construction	2,564
Operation	19,548
Alternative 3 Total	**22,111**
NEPA Baseline	**8,867**
Alternative 3 Net Change	**13,245**
Percent of 2018 California Inventory	**0.003%**
Year 2050	-
Construction	2,564
Operation	31,438
Alternative 3 Total	**34,002**
NEPA Baseline	**8,127**
Alternative 3 Net Change	**25,875**
Percent of 2018 California Inventory	**0.006%**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; NEPA = National Environmental Policy Act; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) Construction emissions are amortized over 30 years.

(2) The NEPA baseline is the No Action Alternative. The NEPA baseline for years 2030, 2035, and 2050 reflects the No Action Alternative under future year conditions.

(3) Alternative 3 Net Change = Alternative 3 Total minus NEPA Baseline.

3.1.5.7 Alternative 4: Public-Private Development – NAVWAR and Higher Density Mixed Use with a Transit Center

Under Alternative 4, construction and operation of the Navy facilities and private development would be the same as described for Alternative 2. Construction of the transit center would occur from 2026 through 2034. Operation of the transit center would begin in 2035.

Conformity Applicability Analysis

Table 3.1-25 presents estimates of annual conformity-related emissions that would occur from construction and operation of Alternative 4. These data show that the annual emissions from Alternative 4 in each conformity milestone year would be below the conformity *de minimis* thresholds of 25 tons per year of VOCs or NO_x. Therefore, Alternative 4 would not be subject to the requirements of the General Conformity Rule. Appendix D, Attachment 3 presents the conformity-related emission calculations and Record of Non-Applicability for Alternative 4.

Table 3.1-25 Annual Conformity-Related Emissions, Alternative 4 (tons/year)

Year/Source Category[1]	VOC	NO_x
Year 2023[2]	-	-
Alternative 4 Construction	**0.29**	**1.39**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2026	-	-
Alternative 4 Construction	0.40	2.93

Year/Source Category[(1)]	***VOC***	***NO_x***
Alternative 4 Operations	4.40	4.05
Alternative 4 Total	**4.80**	**6.98**
No Action Alternative	5.63	6.58
Alternative 4 Net Change[(3)]	**(0.83)**	**0.41**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2029	-	-
Alternative 4 Construction	2.57	2.70
Alternative 4 Operations	4.32	3.73
Alternative 4 Total	**6.89**	**6.44**
No Action Alternative	5.49	5.82
Alternative 4 Net Change	**1.40**	**0.62**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2032	-	-
Alternative 4 Construction	2.56	2.97
Alternative 4 Operations	4.25	3.55
Alternative 4 Total	**6.81**	**6.52**
No Action Alternative	5.38	5.43
Alternative 4 Net Change	**1.43**	**1.09**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2050[(4)]	-	-
Alternative 4 Operations	**4.08**	**3.31**
No Action Alternative	5.10	5.03
Alternative 4 Net Change	**(1.02)**	**(1.72)**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Maximum Year[(5)]	-	-
Alternative 4 Construction	**3.41**	**1.88**
Alternative 4 Operations	--	--
Alternative 4 Total	--	--
No Action Alternative	--	--
Alternative 4 Net Change	**3.41**	**1.88**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; -- = not applicable.

Notes: [(1)] Construction emissions include all on-site emissions and outbound haul truck emissions. Operational emissions include all on-site emissions associated with operation of the Navy facilities except permitted stationary sources.

[(2)] Assumes no net change in operational emissions prior to 2026. Therefore, 2023 construction emissions were compared directly to the de minimis thresholds.

[(3)] Net change = Alternative 4 Total minus No Action Alternative.

[(4)] Assumes there would be no construction in 2050.

[(5)] The maximum year is the year with the highest net change in emissions. Operational emissions in intermediate years were interpolated. The maximum years would be 2025 for VOC and 2021 for NOx, which only includes proposed construction.

NEPA Air Quality Analyses

Criteria Pollutants

Table 3.1-16 presents estimates of annual criteria pollutant emissions that would occur from construction of the Navy facilities as part of Alternative 4. These data show that annual emissions during this period would be below the applicable annual significance thresholds for all pollutants. Therefore, construction of the Navy facilities under Alternative 4 would result in less than significant impacts to criteria pollutant levels.

Although OTC would continue to operate during construction of Alternative 4, the analysis assumed that operational activities would remain at existing levels during construction of the Navy facilities. Therefore, operational emissions would not increase relative to the NEPA baseline during that period. As a result, the construction emissions in Table 3.1-16 also represent the net change in construction and operational emissions relative to the NEPA baseline.

Table 3.1-26 presents estimates of maximum annual emissions by source type that would occur during the entire construction period of Alternative 4. The main activities contributing to the emissions are the same as described for Alternative 2.

Table 3.1-27 presents estimates of annual criteria pollutant emissions for Alternative 4 that would occur from the year the newly constructed Navy facilities would begin operating (2026) until the first year of operations after the completion of all construction (2050). The table also includes two intermediate analysis years (2030 and 2035) as well as the overall maximum year of emissions. The table shows both construction and operational emissions for each analysis year except 2050, when all construction would be complete, and the alternative would be operating at full capacity. Vehicle trips generated by the operation of Alternative 4 would be the largest contributor to all pollutant emissions except VOC. Use of consumer products would be the largest contributor to VOC emissions during operations.

Table 3.1-26 Maximum Annual Emissions from all Construction Years by Source Category, Alternative 4 (tons/year)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP*[(1)]	*Combined HAPs*
Fugitive Dust	--	--	--	--	0.96	0.23	0.001	0.002
Off-Road Equipment	0.60	3.07	22.19	0.04	0.09	0.09	0.18	0.33
Paving Off-Gas	0.03	--	--	--	--	--	0.003	0.01
Architectural Coating	3.18	--	--	--	--	--	0.18	0.76
Truck Trips	0.16	5.46	2.11	0.02	0.61	0.18	0.03	0.06
Worker Trips	1.13	0.66	7.22	0.03	3.51	0.95	0.06	0.25
All Source Categories[(2)]	**4.13**	**8.29**	**29.73**	**0.08**	**4.03**	**1.17**	**0.22**	**1.09**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; -- cell means that the source type does not emit that pollutant.

Notes: (1) The highest single HAPs would be manganese for fugitive dust; formaldehyde for off-road equipment and truck trips; benzene for paving off-gas; toluene for architectural coating and All Source Categories; and 2,2,4-trimethylpentane for worker trips.

(2) The All Source Categories emissions are less than the sum of the individual source category emissions because not all maximum individual source emissions would occur in the same year.

Table 3.1-27 Annual Construction and Operational Emissions for years 2026-2050, Alternative 4 (tons/year)

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)(2)*	*Combined HAPs*
Year 2026	-	-	-	-	-	-	-	-
Construction	1.05	6.57	18.13	0.05	3.16	0.87	0.14	0.37
Operation	4.40	4.05	9.53	0.04	3.26	0.95	0.20	0.67
Alternative 4 Total	5.45	10.62	27.66	0.09	6.42	1.82	0.24	1.03
NEPA Baseline(3)	5.63	6.59	15.26	0.06	5.10	1.48	0.26	0.90
Alternative 4 Net Change(4)	**-0.18**	**4.03**	**12.40**	**0.03**	**1.32**	**0.34**	**0.10**	**0.14**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030	-	-	-	-	-	-	-	-
Construction	3.56	8.22	28.03	0.08	3.83	1.09	0.21	1.02
Operation	17.09	16.33	34.50	0.13	12.83	3.63	0.78	2.58
Alternative 4 Total	20.65	24.55	62.53	0.21	16.65	4.72	0.95	3.60
NEPA Baseline	5.45	5.58	13.07	0.05	4.76	1.35	0.25	0.85
Alternative 4 Net Change	**15.20**	**18.97**	**49.46**	**0.16**	**11.89**	**3.37**	**0.70**	**2.75**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2035	-	-	-	-	-	-	-	-
Construction	2.89	8.13	23.14	0.07	1.94	0.59	0.19	0.86
Operation	26.35	24.94	46.56	0.19	18.68	5.27	1.21	3.92
Alternative 4 Total	29.24	33.08	69.69	0.25	20.62	5.86	1.36	4.77
NEPA Baseline	5.29	5.25	11.42	0.05	4.47	1.27	0.24	0.82
Alternative 4 Net Change	**23.95**	**27.83**	**58.28**	**0.21**	**16.15**	**4.59**	**1.11**	**3.96**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2050	-	-	-	-	-	-	-	-
Alternative 4 Total(5)	51.02	49.75	68.66	0.29	26.33	7.50	2.37	7.40
NEPA Baseline	5.11	5.05	9.11	0.04	3.49	1.00	0.24	0.78
Alternative 4 Net Change	**45.92**	**44.70**	**59.55**	**0.25**	**22.84**	**6.51**	**2.13**	**6.63**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**
Maximum Year(6)	-	-	-	-	-	-	-	-
Construction	2.63	7.06	23.67	0.06	1.38	0.40	0.14	0.75
Operation	49.38	46.44	65.71	0.27	25.82	7.35	2.29	7.20
Alternative 4 Total	52.00	53.50	89.38	0.33	27.19	7.76	2.43	7.95
NEPA Baseline	5.12	5.07	9.41	0.04	3.56	1.02	0.24	0.78

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)(2)*	*Combined HAPs*
Alternative 4 Net Change	**46.88**	**48.43**	**79.97**	**0.29**	**23.64**	**6.74**	**2.19**	**7.16**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) The displayed construction and operation values often correspond to different HAPs, and therefore do not always sum to equal the Alternative 4 Total value. Similarly, the displayed Alternative 4 Total and NEPA Baseline values sometimes corresponds to different HAPs than the Alternative 4 Net Change value, and therefore the former two values do not always subtract to equal the latter value.

(2) The highest single HAPs corresponding to the Alternative 4 Net Change values would be formaldehyde in 2026 and toluene in all other years.

(3) The NEPA Baseline is operation of the No Action Alternative in the designated analysis year.

(4) Alternative 4 Net Change = Alternative 4 minus NEPA Baseline.

(5) Total emissions in 2050 only includes operational emissions because construction would be complete.

(6) The year with the maximum net change in emissions was selected from all calendar years from 2026-2050. Emissions in intermediate years were interpolated. The maximum year would be 2049 for VOC, PM_{10}, $PM_{2.5}$, highest single HAP, and combined HAPs; and 2048 for NO_x, CO, and SO_x.

For each year, Table 3.1-27 compares the annual net change in emissions of Alternative 4 (i.e., Alternative 4 minus the No Action Alternative) to the annual significance thresholds. These data show that the net emissions increases would be below the annual thresholds for all pollutants in all analysis years except VOC and NO_x. Therefore, Alternative 4 would result in less than significant impacts to CO, SO_2, PM_{10}, and $PM_{2.5}$ pollutant levels. Interpolation between analysis years estimated that the net increases in VOC and NO_x emissions from Alternative 4 would exceed the annual thresholds of 25 tons per year beginning in years 2036 and 2035, respectively (see Appendix D Attachments 1.1 and 1.2 for emissions interpolated by year). Therefore, the following provides further analysis of the significance of VOC and NO_x emissions associated with Alternative 4 in terms of regional ozone impacts and local NO_2 impacts.

Regarding potential impacts to ambient ozone from Alternative 4, the *2020 Ozone Plan* evaluated emissions of VOC and NO_x due to planned or new Navy/U.S. Marine Corps projects in San Diego County, as discussed above for Alternative 2. For comparison, construction and operation of Alternative 4 would emit a maximum of 0.14 and 0.15 tons per day of VOC and NO_x emissions (46.88 and 48.43 tons per year of VOC and NO_x emissions, as shown in Table 3.1-27), which equates to 11.9 and 1.6 percent of the growth projections evaluated for new Navy/U.S. Marine Corps projects in the *2020 Ozone Plan*. These new emissions from Alternative 4 would fit within the growth projections evaluated for future Navy/U.S. Marine Corps projects in the 2020 Ozone Plan and therefore would not contribute to an exceedance of an ozone standard.

Regarding potential impacts to ambient NO_2 from Alternative 4, most NO_x emissions from construction and operation of Alternative 4 would occur from vehicles that would operate on roadways within several miles of OTC. The transient nature of these emissions and their release over such a large area would disperse their ambient concentrations to low levels. In combination with background levels of

NO_2, which are well below the ambient air quality standards (see Table 3.1-3), NO_x emissions from Alternative 4 would not contribute to an exceedance of an ambient NO_2 standard. In conclusion, Alternative 4 would result in less than significant impacts to criteria pollutant levels.

Under NEPA, the transit center vehicle trips would have no effect on the net change in emissions from Alternative 4 because the trips would merely shift from one location to another without any change in operations. That is, the future emissions from transit center vehicle trips in the new location under Alternative 4 would be essentially the same as the future emissions from transit center vehicle trips in the current location under the No Action Alternative. Therefore, emissions from transit center vehicle trips are not applicable to Alternative 4 and are not included in Table 3.1-27. All other emissions related to the transit center operations–from consumer product use, re-application of architectural coatings, and natural gas use–were included in the table. For informational purposes, Table 3.1-28 presents the emissions from vehicle trips generated by transit center operations in 2035 and 2050.

Table 3.1-28 Annual Operational Emissions for years 2035-2050 from Transit Center Vehicle Trips, Alternatives 4 and 5 (tons/year)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e* (MT/yr)	*Highest Single HAP*[(1)]	*Combined HAPs*
2035	0.46	2.22	5.48	0.02	2.70	0.73	2,145	0.03	0.10
2050	0.42	2.43	5.25	0.02	2.89	0.78	2,268	0.02	0.09

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Note: Transit center vehicle trip emissions do not contribute to the emissions for the alternatives under NEPA. Therefore, these emissions are shown for informational purposes only.

(1) The highest single HAP would be 2,2,4-trimethylpentane in all years.

Potential Mitigation Measures

To ensure that VOC and NO_x emissions from combined construction and operation of Alternative 4 would produce less than significant impacts, the Navy would implement AQ MIT-1. Implementation of AQ MIT-1 would ensure that future Navy/U.S. Marine Corps projects would be consistent with their emissions growth projections identified in the San Diego County ozone plans.

Carbon Monoxide Hot Spots

Under Alternative 4, the project traffic study (see Appendix E) estimated that the intersection of Rosecrans Street and Sports Arena Boulevard would have the greatest peak hour traffic volume of all signalized study intersections. In 2050, this intersection would operate at LOS F. With the inclusion of traffic generated from Alternative 4, the p.m. peak hour traffic volume would be 8,323 vehicles per hour (Table 3.1-29). This volume is only 26 percent of the SMAQMD’s screening threshold of 31,600 vehicles per hour. Therefore, operation of Alternative 4 would result in less than significant local CO impacts.

Table 3.1-29 CO Hot Spots Screening Analysis, Alternative 4

Alternative 4	*Analysis Value*
Highest hourly intersection traffic volume, Alternative 4	8,323 vehicles per hour[1]
Screening threshold for potential CO hot spots	31,600 vehicles per hour
Exceeds threshold?	No

Legend: CO = carbon monoxide.
Note: [1] The selected intersection is Rosecrans Street and Sports Arena Boulevard. The displayed volume is the sum of the 2050 p.m. peak hour volumes (project plus background) through all four intersection legs.

Hazardous Air Pollutants

Construction

Construction of Alternative 4 would generate HAP emissions from the same sources as described for Alternative 2. The application of architectural coatings would be the largest source of HAPs from onsite construction. Table 3.1-26 shows that for Alternative 4, peak annual emissions of combined HAPs would amount to 1.09 tons. The highest annual emissions of an individual HAP would occur in the form of toluene and would amount to 0.22 tons. Since HAP emissions from the construction of Alternative 4 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs, construction of Alternative 4 would result in less than significant health impacts to the public.

Emissions of HAPs within the active construction areas of OTC Site 1 and OTC Site 2 would periodically change as the construction sequence progresses, as described for Alternative 2. The transient nature of construction emissions would tend to disperse emissions and to limit HAP exposure at any offsite location. HAP concentrations would decline rapidly with distance from the active construction areas.

Management practices proposed for Alternative 4 would minimize construction emissions of HAPs and their associated health impacts (see Section 3.1.5.9). Like Alternative 2, management practice AQ MGMT-2 (see Section 3.1.5.9) would be implemented to avoid generating significant levels of asbestos emissions during demolition.

Operations

Alternative 4 would include the same land uses as described under Alternative 2, with the addition of a transit center. As the description of Alternative 4 does not identify specific commercial facilities that would be sources of HAPs (see description in Section 2.3.6, *Alternative 4*), the analysis did not evaluate HAP emissions from this land use type. Sources of HAPs from Navy land uses are the same as described for Alternative 2.

Table 3.1-27 shows that the peak net change in annual emissions of combined HAPs from construction and operation of Alternative 4 would amount to 7.16 tons. Use of consumer products (such as cleaners and solvents) would be the largest source of HAPs from the operation of Alternative 4. The highest annual net increase of an individual HAP would occur in the form of toluene and would amount to 2.19 tons. These net increases in HAPs emissions would be below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs. Therefore, HAP emissions associated with construction and operation of Alternative 4 would result in less than significant HAP impacts to the public.

Stationary sources associated with this alternative would be subject to SDAPCD Rules and Regulations and would require SDAPCD operating permits. In addition, management practices proposed for

Alternative 4 would minimize HAP emissions during operations (see Section 3.1.5.9). Therefore, HAP emissions associated with operation of Alternative 4 would result in less than significant health impacts to the public.

As described under Alternative 2, this analysis also considered the potential for future OTC residents to be exposed to HAP emissions from external nearby emissions sources such as the Interstate 5 freeway and existing businesses near OTC. Consistent with the goals of CARB's Air Quality and Land Use Handbook, Alternative 4 would support infill, mixed-use, higher density, and transit-oriented development that would benefit regional air quality. Additionally, the operational design measures proposed for Alternative 4 (see Section 3.1.5.9) would minimize exposure of future OTC residents to external sources of HAPs. Therefore, operation of Alternative 4 would result in less than significant HAP impacts to future OTC residents.

Greenhouse Gases

Table 3.1-30 presents estimates of annual GHG emissions that would occur from construction and operation of Alternative 4 by analysis year. Vehicle trips generated by OTC would be the largest contributor to the CO_2e emissions. For each analysis year, Table 3.1-30 shows the annual net change in emissions of Alternative 4 (i.e., Alternative 4 minus the No Action Alternative). The highest net increase of 50,890 metric tons per year of CO_2e would occur in the buildout year of 2050. For all analysis years, CO_2e emissions from Alternative 3 would range from 0.0007 to 0.012 percent of the statewide GHG emissions.

As discussed previously, transit center vehicle trips would have no effect on the net change in emissions from Alternative 4 under NEPA. Therefore, GHG emissions from transit center vehicle trips are not included in Table 3.1-30. All other emissions related to the transit center operations–from electricity consumption, natural gas use, water use and disposal, and solid waste disposal–are included in the table. For informational purposes, Table 3.1-28 presents GHG emissions from vehicle trips generated by transit center operations in 2035 and 2050.

Table 3.1-30 Annual Construction and Operational GHG Emissions, Alternative 4

Year/Source Category	*CO_2e (MT/yr)*
Year 2026	-
Construction[1]	5,138
Operation	8,338
Alternative 4 Total	**13,476**
NEPA Baseline[2]	**10,673**
Alternative 4 Net Change[3]	**2,802**
Percent of 2018 California Inventory	**0.0007%**
Year 2030	-
Construction	5,138
Operation	22,265
Alternative 4 Total	**27,403**
NEPA Baseline	**9,290**
Alternative 4 Net Change	**18,113**
Percent of 2018 California Inventory	**0.004%**
Year 2035	-
Construction	5,138
Operation	31,926

Year/Source Category	*CO_2e (MT/yr)*
Alternative 4 Total	**37,064**
NEPA Baseline	**8,867**
Alternative 4 Net Change	**28,197**
Percent of 2018 California Inventory	**0.007%**
Year 2050	-
Construction	5,138
Operation	53,879
Alternative 4 Total	**59,017**
NEPA Baseline	**8,127**
Alternative 4 Net Change	**50,890**
Percent of 2018 California Inventory	**0.012%**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; NEPA = National Environmental Policy Act; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) Construction emissions are amortized over 30 years.

(2) The NEPA baseline is the No Action Alternative. The NEPA baseline for years 2030, 2035, and 2050 reflects the No Action Alternative under future year conditions.

(3) Alternative 4 Net Change = Alternative 4 Total minus NEPA Baseline.

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

Under Alternative 5, construction and operation of the Navy facilities and private development would be the same as described for Alternative 2. Construction of the transit center would occur from 2026 through 2034. Operation of the transit center would begin in 2035.

NEPA Air Quality Analyses

Criteria Pollutants

Table 3.1-16 presents estimates of annual criteria pollutant emissions that would occur from construction of the Navy facilities as part of Alternative 5. These data show that annual emissions during this period would be below the applicable annual significance thresholds for all pollutants. Therefore, construction of the Navy facilities under Alternative 5 would result in less than significant impacts to criteria pollutant levels.

Although OTC would continue to operate during construction of Alternative 5, the analysis assumed that operational activities would remain at existing levels during construction of the Navy facilities. Therefore, operational emissions would not increase relative to the NEPA baseline during that period. As a result, the construction emissions in Table 3.1-16 also represent the net change in construction and operational emissions relative to the NEPA baseline.

Table 3.1-31 presents estimates of maximum annual emissions by source type that would occur during the entire construction period of Alternative 5. The main activities contributing to the emissions are the same as described for Alternative 2.

Table 3.1-31 Maximum Annual Emissions from all Construction Years by Source Category, Alternative 5 (tons/year)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)*	*Combined HAPs*
Fugitive Dust	--	--	--	--	0.96	0.23	0.001	0.23
Off-Road Equipment	0.47	2.41	17.76	0.03	0.07	0.07	0.14	0.23
Paving Off-Gas	0.03	--	--	--	--	--	0.004	0.03
Architectural Coating	3.18	--	--	--	--	--	0.18	0.76
Truck Trips	0.14	4.56	1.78	0.02	0.51	0.15	0.02	0.03
Worker Trips	1.03	0.66	6.74	0.02	3.19	0.86	0.06	0.03
All Source Categories(2)	**4.13**	**6.73**	**24.30**	**0.07**	**3.61**	**1.04**	**0.21**	**1.01**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; -- cell means that the source type does not emit that pollutant.

Notes: (1) The highest single HAPs would be manganese for fugitive dust; formaldehyde for off-road equipment and truck trips; benzene for paving off-gas; toluene for architectural coating and All Source Categories; and 2,2,4-trimethylpentane for worker trips.

(2) The All Source Categories emissions are less than the sum of the individual source category emissions because not all maximum individual source emissions would occur in the same year.

Table 3.1-32 presents estimates of annual criteria pollutant emissions for Alternative 5 that would occur from the year the newly constructed Navy facilities would begin operating (2026) until the first year of operations after the completion of all construction (2050). The table also includes two intermediate analysis years (2030 and 2035) as well as the overall maximum year of emissions. The table shows both construction and operational emissions for each analysis year except 2050, when all construction would be complete, and the alternative would be operating at full capacity. Vehicle trips generated by the operation of Alternative 5 would be the largest contributor to all pollutant emissions except VOC. Use of consumer products would be the largest contributor to VOC emissions during operations.

For each year, Table 3.1-32 compares the annual net change in emissions of Alternative 5 (i.e., Alternative 5 minus the No Action Alternative) to the annual significance thresholds. These data show that the net emissions increases would be below the annual thresholds for all pollutants in all analysis years except VOC and NO_x. Therefore, Alternative 5 would result in less than significant impacts to CO, SO_2, PM_{10}, and $PM_{2.5}$ pollutant levels. Interpolation between analysis years estimated that the net increases in VOC and NO_x emissions from Alternative 5 would exceed the annual thresholds of 25 tons per year beginning in years 2040 and 2038, respectively (see Appendix D Attachments 1.1 and 1.2 for emissions interpolated by year). Therefore, the following provides further analysis of the significance of VOC and NOx emissions associated with Alternative 5 in terms of regional ozone impacts and local NO_2 impacts.

Regarding potential impacts to ambient ozone from Alternative 5, the 2020 Ozone Plan evaluated emissions of VOC and NO_x due to planned or new Navy/U.S. Marine Corps projects in San Diego County, as discussed above for Alternative 2. For comparison, construction and operation of Alternative 5 would emit a maximum of 0.12 tons per day of both VOC and NO_x emissions (36.92 and 38.52 tons per year of VOC and NO_x emissions, as shown in Table 3.1-32), which equates to 9.4 and 1.3 percent of the growth projections evaluated for new Navy/U.S. Marine Corps projects in the *2020 Ozone Plan*. These new emissions from Alternative 5 would fit within the growth projections evaluated for future Navy/U.S.

Marine Corps projects in the 2020 Ozone Plan and therefore would not contribute to an exceedance of an ozone standard.

Regarding potential impacts to ambient NO_2 from Alternative 5, most NO_x emissions from construction and operation of Alternative 5 would occur from vehicles that would operate on roadways within several miles of OTC. The transient nature of these emissions and their release over such a large area would disperse their ambient concentrations to low levels. In combination with background levels of NO_2, which are well below the ambient air quality standards (see Table 3.1-3), NO_x emissions from Alternative 5 would not contribute to an exceedance of an ambient NO_2 standard. In conclusion, Alternative 5 would result in less than significant impacts to criteria pollutant levels.

Under NEPA, the transit center vehicle trips would have no effect on the net change in emissions from Alternative 5 because the trips would merely shift from one location to another without any change in operations. That is, the future emissions from transit center vehicle trips in the new location under Alternative 5 would be essentially the same as the future emissions from transit center vehicle trips in the current location under the No Action Alternative. Therefore, the emissions from transit center vehicle trips are not included in Table 3.1-32. All other emissions related to the transit center operations – from consumer product use, re-application of architectural coatings, and natural gas use – are included in the table. For informational purposes, Table 3.1-28 presents emissions from vehicle trips generated by transit center operations in 2035 and 2050.

Table 3.1-32 Annual Construction and Operational Emissions for years 2026-2050, Alternative 5 (tons/year)

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)(2)*	*Combined HAPs*
Year 2026	-	-	-	-	-	-	-	-
Construction	0.92	5.66	15.45	0.05	2.94	0.80	0.11	0.32
Operation	4.40	4.05	9.53	0.04	3.26	0.95	0.20	0.67
Alternative 5 Total	5.32	9.72	24.98	0.08	6.20	1.75	0.23	0.98
NEPA Baseline(3)	5.63	6.59	15.26	0.06	5.10	1.48	0.26	0.90
Alternative 5 Net Change(4)	**-0.31**	**3.12**	**9.73**	**0.03**	**1.10**	**0.27**	**0.08**	**0.09**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030	-	-	-	-	-	-	-	-
Construction	2.93	6.73	23.10	0.07	3.44	0.98	0.17	0.84
Operation	14.41	13.75	29.15	0.11	10.82	3.06	0.66	2.18
Alternative 5 Total	17.34	20.48	52.25	0.18	14.26	4.04	0.80	3.02
NEPA Baseline	5.45	5.58	13.07	0.05	4.76	1.35	0.25	0.85
Alternative 5 Net Change	**11.89**	**14.90**	**39.18**	**0.13**	**9.50**	**2.69**	**0.55**	**2.16**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2035	-	-	-	-	-	-	-	-
Construction	2.31	6.73	18.95	0.06	1.59	0.49	0.15	0.69
Operation	21.73	20.66	38.91	0.16	15.66	4.42	1.00	3.24
Alternative 5 Total	24.04	27.39	57.86	0.21	17.25	4.90	1.12	3.92
NEPA Baseline	5.29	5.25	11.42	0.05	4.47	1.27	0.24	0.82
Alternative 5 Net Change	**18.74**	**22.14**	**46.45**	**0.17**	**12.78**	**3.64**	**0.87**	**3.11**

Year/Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*Highest Single HAP(1)(2)*	*Combined HAPs*
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Year 2050	-	-	-	-	-	-	-	-
Alternative 5 Total(5)	41.25	40.65	57.32	0.24	22.38	6.37	1.92	6.00
NEPA Baseline	5.11	5.05	9.11	0.04	3.49	1.00	0.24	0.78
Alternative 5 Net Change	**36.14**	**35.60**	**48.21**	**0.20**	**18.88**	**5.37**	**1.68**	**5.23**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**
Maximum Year(6)	-	-	-	-	-	-	-	-
Construction	2.09	5.61	18.46	0.05	1.08	0.32	0.11	0.59
Operation	39.95	37.98	54.87	0.23	21.93	6.24	1.85	5.82
Alternative 5 Total	42.04	43.59	73.32	0.28	23.01	6.55	1.96	6.41
NEPA Baseline	5.12	5.07	9.41	0.04	3.56	1.02	0.24	0.78
Alternative 5 Net Change	**36.92**	**38.52**	**63.91**	**0.24**	**19.45**	**5.54**	**1.72**	**5.63**
Significance Thresholds	**25**	**25**	**250**	**250**	**250**	**250**	**10**	**25**
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HAPs = hazardous air pollutants; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.

(1) The displayed construction and operation values often correspond to different HAPs, and therefore do not always sum to equal the Alternative 5 Total value. Similarly, the displayed Alternative 5 Total and NEPA Baseline values sometimes corresponds to different HAPs than the Alternative 5 Net Change value, and therefore the former two values do not always subtract to equal the latter value.

(2) The highest single HAPs corresponding to the Alternative 5 Net Change values would be formaldehyde in 2026 and toluene in all other years.

(3) The NEPA Baseline is operation of the No Action Alternative in the designated analysis year.

(4) Alternative 5 Net Change = Alternative 5 minus NEPA Baseline.

(5) Total emissions in 2050 only includes operational emissions because construction would be complete.

(6) The year with the maximum net change in emissions was selected from all calendar years from 2026-2050. Emissions in intermediate years were interpolated. The maximum year would be 2049 for VOC, PM_{10}, $PM_{2.5}$, highest single HAP, and combined HAPs; and 2048 for NO_x, CO, and SO_x.

Potential Mitigation Measures

To ensure that VOC and NO_x emissions from combined construction and operation of Alternative 5 would produce less than significant impacts, the Navy would implement AQ MIT-1. Implementation of AQ MIT-1 would ensure that future Navy/U.S. Marine Corps projects would be consistent with their emissions growth projections identified in the San Diego County ozone plans.

Carbon Monoxide Hot Spots

Under Alternative 5, the project traffic study (see Appendix E) estimated that the intersection of Rosecrans Street and Sports Arena Boulevard would have the greatest peak hour traffic volume of all signalized study intersections. In 2050, this intersection would operate at LOS F. With the inclusion of traffic generated from Alternative 5, the p.m. peak hour traffic volume would be 8,097 vehicles per hour (Table 3.1-33). This volume is only 26 percent of the SMAQMD’s screening threshold of 31,600 vehicles per hour. Therefore, operation of Alternative 5 would result in less than significant local CO impacts.

Table 3.1-33 CO Hot Spots Screening Analysis, Alternative 5

Alternative 5	*Analysis Value*
Highest hourly intersection traffic volume, Alternative 5	8,097 vehicles per hour(1)
Screening threshold for potential CO hot spots	31,600 vehicles per hour
Exceeds threshold?	No

Legend: CO = carbon monoxide.
Note: (1) The selected intersection is Rosecrans Street and Sports Arena Boulevard. The displayed volume is the sum of the 2050 p.m. peak hour volumes (project plus background) through all four intersection legs.

Hazardous Air Pollutants

Construction

Construction of Alternative 5 would generate HAP emissions from the same sources as described for Alternative 2. The application of architectural coatings would be the largest source of HAPs from onsite construction. Table 3.1-31 shows that for Alternative 5, peak annual emissions of combined HAPs would amount to 1.01 tons. The highest annual emissions of an individual HAP would occur in the form of toluene and would amount to 0.21 tons. Since HAPs emissions from the construction of Alternative 5 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs, construction of Alternative 5 would result in less than significant health impacts to the public.

Emissions of HAPs within the active construction areas of OTC Site 1 and OTC Site 2 would periodically change as the construction sequence progresses, as described for Alternative 2. The transient nature of construction emissions would tend to disperse emissions and to limit HAP exposure at any offsite location. HAP concentrations would decline rapidly with distance from the active construction areas.

Management practices proposed for Alternative 5 would minimize construction emissions of HAPs and their associated health impacts (see Section 3.1.5.9). Like Alternative 2, proposed management practice AQ MGMT-2 (see Section 3.1.5.9) would be implemented to avoid generating significant levels of asbestos emissions during demolition.

Operations

Alternative 5 would include the same land uses as described under Alternative 2, with the addition of a transit center. As the description of Alternative 5 does not identify specific commercial facilities that would be sources of HAPs (see description in Section 2.3.7, *Alternative 5*), the analysis did not evaluate HAP emissions from this land use type. Sources of HAPs from Navy land uses are the same as described for Alternative 2.

Table 3.1-32 shows that the peak net change in annual emissions of combined HAPs from construction and operation of Alternative 5 would amount to 5.63 tons. Use of consumer products (such as cleaners and solvents) would be the largest source of HAPs from operations. The highest annual net increase of an individual HAP would occur in the form of toluene and would amount to 1.72 tons. These net increases in HAPs emissions would be well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs. Therefore, HAP emissions associated with construction and operation of Alternative 5 would result in less than significant HAP impacts to the public.

Stationary sources associated with this alternative would be subject to SDAPCD Rules and Regulations and would require SDAPCD operating permits. In addition, management practices proposed for

Alternative 5 would minimize HAP emissions during operations (see Section 3.1.5.9). Therefore, HAP emissions associated with the operation of Alternative 5 would result in less than significant health impacts to sensitive receptors.

As described under Alternative 2, this analysis also considered the potential for future OTC residents to be exposed to HAP emissions from external nearby emissions sources such as the Interstate 5 freeway and existing businesses near OTC. Consistent with the goals of CARB's Air Quality and Land Use Handbook, Alternative 5 would support infill, mixed-use, higher density, and transit-oriented development that would benefit regional air quality. Additionally, the operational design measures proposed for Alternative 5 (see Section 3.1.5.9) would minimize exposure of future OTC residents to external sources of HAPs. Therefore, operation of Alternative 5 would result in less than significant HAP impacts to future OTC residents.

Greenhouse Gases

Table 3.1-34 presents estimates of annual GHG emissions that would occur from construction and operation of Alternative 5 by analysis year. Vehicle trips generated by OTC would be the largest contributor to the CO_2e emissions. For each analysis year, Table 3.1-34 shows the annual net change in emissions of Alternative 5 (i.e., Alternative 5 minus the NEPA baseline). The highest net increase of 40,646 metric tons per year of CO_2e would occur in the buildout year of 2050. For all analysis years, CO_2e emissions from Alternative 3 would range from 0.0005 to 0.01 percent of the statewide GHG emissions.

Table 3.1-34 Annual Construction and Operational GHG Emissions, Alternative 5

Year/Source Category	*CO_2e (MT/yr)*
Year 2026	-
Construction[(1)]	4,261
Operation	8,338
Alternative 5 Total	**12,598**
NEPA Baseline[(2)]	**10,673**
Alternative 5 Net Change[(3)]	**1,925**
Percent of 2018 California Inventory	**0.0005%**
Year 2030	-
Construction	4,261
Operation	19,092
Alternative 5 Total	**23,353**
NEPA Baseline	**9,290**
Alternative 5 Net Change	**14,063**
Percent of 2018 California Inventory	**0.003%**
Year 2035	-
Construction	4,261
Operation	26,810
Alternative 5 Total	**31,071**
NEPA Baseline	**8,867**
Alternative 5 Net Change	**22,204**
Percent of 2018 California Inventory	**0.005%**
Year 2050	-
Construction	4,261
Operation	44,513

Year/Source Category	*CO_2e (MT/yr)*
Alternative 5 Total	**48,773**
NEPA Baseline	**8,127**
Alternative 5 Net Change	**40,646**
Percent of 2018 California Inventory	**0.01%**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; NEPA = National Environmental Policy Act; - = no data.

Notes: Calculated values and totals have been rounded; summation of values might not exactly match the totals row.
(1) Construction emissions are amortized over 30 years.
(2) The NEPA baseline is the No Action Alternative. The NEPA baseline for years 2030, 2035, and 2050 reflects the No Action Alternative under future year conditions.
(3) Alternative 5 Net Change = Alternative 5 Total minus NEPA Baseline.

As discussed previously, transit center vehicle trips would have no effect on the net change in emissions from Alternative 5 under NEPA. Therefore, the emissions from transit center vehicle trips are not included in Table 3.1-34. All other emissions related to the transit center operations – from electricity consumption, natural gas use, water use and disposal, and solid waste disposal – are included in the table. For informational purposes, Table 3.1-28 presents GHG emissions from vehicle trips generated by transit center operations in 2035 and 2050.

3.1.5.9 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No monitoring measures would be warranted for air quality based on the analysis presented in Section 3.1.5.

Proposed Management Practices

The following is a list of proposed management practices that the action alternatives would adopt to minimize air pollutant emissions from construction and operational activities. Each measure identifies the pollutant type (criteria pollutants, HAPs, or GHGs) that would be reduced.

Measures to Reduce Construction Emissions

- AQ MGMT-1. *Fugitive Dust Control Plan. Reduces criteria pollutants (PM_{10}, $PM_{2.5}$).* Prior to the start of construction, the Navy would prepare a detailed Fugitive Dust Control Plan to ensure compliance with SDAPCD Rules 51 (Nuisance) and 55 (Fugitive Dust Control) (SDAPCD, 2020a). The plan would incorporate the following measures:
  - Watering: During conditions of dry soil, use water spray/mists to minimize dust emissions generated from earthmoving, grading, bulk material handling, and demolition activities and from the movement of vehicles on unpaved surfaces. When necessary due to dry conditions, apply water at the end of the work day to areas of soils disturbed during the day.
  - Speed Limits: Limit haul truck speeds to 10 miles per hour on any unpaved surface and 15 miles per hour on any paved surface. Post signs throughout the site to remind equipment operators and truck drivers of the speed limits.
  - Inactive Areas: Once earthmoving/grading activities are complete in an area, stabilize disturbed soils in these areas within 5 working days with a non-toxic soil stabilizer or soil wetting agent. Prohibit vehicles from operating on these completed areas.

- Unpaved Roads: Cover unpaved roads with a non-toxic soil stabilizer or soil wetting agent. Consider covering unpaved roads with a low-silt-content material such as recycled road base or gravel to a minimum of 4 inches.
- Material Loading: Load materials carefully to minimize the potential for spills or dust creation. Minimize drop height from loader bucket. Implement water spraying as needed to suppress potential dust generation during loading operations. Take care to apply dust suppression water to the top of the load or source material to avoid wetting the truck tires. Do not perform loading during unfavorable weather conditions such as high winds or rain. Remove visible soil material from trucks before they leave loading areas to prevent tracking soil out.
- Track-out Prevention - To prevent soil haul trucks from tracking soil onto public roads, use at least one of the following measures at each vehicle egress from onsite unpaved surfaces to onsite paved roads or public roads:
  - Install a pad consisting of washed gravel (minimum size of 1 inch) that is maintained in a clean condition to a depth of at least 6 inches and extending at least 30 feet wide and at least 50 feet long.
  - Pave the surface at least 100 feet long and at least 20 feet wide.
  - Use a wheel shaker/wheel spreading device, also known as a rumble grate, consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and at a sufficient width to allow all wheels of vehicle traffic to travel over grate to remove bulk material from tires and vehicle undercarriages before vehicles exit unpaved surfaces.
  - Install and use a wheel-washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit unpaved surfaces.
  - Any other control measure or device that prevents track-out onto public roads.
- Material Hauling: Use properly secured tarps that cover the entire surface area of truck loads. Maintain a minimum of 6 inches of freeboard or water, or otherwise treat the bulk material to minimize loss of material to wind or spillage.
- Soil Storage Piles: Implement at least one of the following measures:
  - Enclose material in a three- or four-sided barrier equal to the height of the material.
  - Apply water at a sufficient quantity and frequency to prevent wind-driven dust.
  - Apply a non-toxic dust suppressant that complies with air and water quality agency standards at a sufficient quantity and frequency to prevent wind-driven dust.
  - Install and anchor tarps or plastic over the material.
  - Use surface crusting agents on inactive storage piles.
- Paved Roads: Use a street sweeper at least twice per day to remove silt from onsite, paved roads traveled by haul trucks. Remove all track-out at the conclusion of each workday.
- Windblown Dust: To avoid fugitive dust during high wind conditions, cease soil disturbance activities if onsite wind speeds exceed 25 miles per hour for at least 5 minutes in an hour.
- Monitoring: Designate a person to monitor the dust control program and increase control measures, as necessary, to minimize the generation of dust. This responsibility would extend to after-work hours.
- Public Notification: Post a publicly visible sign with the telephone number and person to contact regarding dust complaints.

- AQ MGMT-2. *Demolition Plan. Reduces criteria pollutants (PM_{10}, $PM_{2.5}$) and HAPs (asbestos, lead).* Prior to the start of demolition, the Navy would prepare a detailed demolition plan that complies with SDAPCD Rule 1206 (Asbestos) (SDAPCD, 2020a). The plan would include the following elements:
  - Identify measures to break up, reuse to the maximum extent practical, and haul away demolition debris.
  - Describe dust control best practices that would be used.
  - Identify debris truck haul routes.
  - Discuss abatement measures for handling and disposing of asbestos-containing building materials and contaminated soil.
- AQ MGMT-3. *Tier 4 Construction Equipment. Reduces criteria pollutants and HAPs.* All off-road diesel-powered construction equipment greater than 50 horsepower would meet USEPA Nonroad Final Tier 4 emission standards.
- AQ MGMT-4. *Idling Limits. Reduces criteria pollutants, HAPs, and GHGs.* Engine idling of any diesel-powered on-road and off-road equipment during construction would not exceed 5 minutes at any location, except as provided in exceptions to the applicable regulations adopted by CARB regarding idling for such equipment. The contractor would post legible and visible signs in English and Spanish, in designated queuing areas and at the construction site, to remind equipment operators of the five-minute idling limit. The contractor would conduct unscheduled inspections to ensure compliance with these measures.
- AQ MGMT-5. *Architectural Coating Limits. Reduces maximum daily criteria pollutants (VOC).* The contractor would limit the quantity of architectural coatings applied during construction so that VOC would not exceed 119 pounds per day in the applied coatings.
  - At the current SDAPCD VOC limit of 50 grams per liter for general flat coatings (SDAPCD Rule 67.0.1 [Architectural Coatings] [SDAPCD, 2020a]), this measure equates to a daily limit of 285 gallons of coatings per day.
  - The daily limit for other coatings would be determined using the following formula: quantity of coating (gallons per day) = 285 x 50/(VOC content of other coatings in grams per liter).
- AQ MGMT-6. *Engine Maintenance. Reduces criteria pollutants, HAPs, and GHGs.* The construction contractor would maintain and tune engines per manufacturer's specifications to perform at CARB and/or USEPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.
- AQ MGMT-7. *Alternative Fuels (Construction). Reduces criteria pollutants, HAPs, and GHGs.* The construction contractor shall use alternative fueled and electric construction equipment where feasible.
- AQ MGMT-8. *Low Emission Building Materials. Reduces criteria pollutants (VOC) and HAPs.* Where feasible, the construction contractor would select low-emitting adhesives, paints, coatings, carpet systems, composite wood, agri-fiber products, and others.

Measures to Reduce Operational Emissions

- AQ MGMT-9. *Cool Roofs. Reduces GHGs.* Building construction would include either (1) roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under the 2019 or newer California Green Building Standards Code (California Building Standards Commission, 2020) or (2) a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under the 2019 or newer California Green Building Standards Code.

- AQ MGMT-10. *Leadership in Energy and Environmental Design (LEED). Reduces GHGs.* Building construction would achieve LEED Version 4 certification of at least silver through the U.S. Green Building Council (U.S. Green Building Council, 2021). LEED certification is based on standards that encourage the development of energy-efficient and sustainable buildings.
- AQ MGMT-11. *Solar Energy. Reduces GHGs.* The project would maximize the use of solar energy through installation of photovoltaic panels, solar water heating systems, or other technologies.
- AQ MGMT-12. *Tier 4 Operational Equipment. Reduces criteria pollutants and HAPs.* All off-road diesel-powered equipment greater than 50 horsepower used for operations would meet USEPA Nonroad Final Tier 4 emission standards.
- AQ MGMT-13. *Refrigerant Management Plan. Reduces GHGs.* Prior to the initiation of operations, the Navy would prepare a refrigerant management plan for purposes of ensuring compliance of refrigerant usages with USEPA (40 CFR part 82, Subpart F) and CARB (Refrigeration Management Program [CARB, 2010]) regulations and minimizing GHG emissions of refrigerants from future development.
- AQ MGMT-14. *Sustainable Landscape Design. Reduces GHGs.* The project would incorporate sustainable landscape design where feasible, including:
    - Plant trees to provide shade and CO_2 absorption
    - Use drought-tolerant native vegetation
    - Reduce use of lawn types that require high levels of irrigation
    - Use high-efficiency irrigation technology or recycled site water
    - Design buildings to capture and store rainwater for landscape irrigation
- AQ MGMT-15. *Air Filtration. Reduces exposure to criteria pollutants (PM_{10}, $PM_{2.5}$) and HAPs.* Building construction would include installation of high-efficiency particulate air filters on residential buildings within 500 feet of Interstate 5.
- AQ MGMT-16. *External Source Exposure Reduction. Reduces exposure to criteria pollutants and HAPs.* Where feasible, the project design would incorporate the following best practices to reduce the exposure of future OTC residents to pollutant concentrations from external emission sources:
    - Maximize the distance between new residential buildings and the Interstate 5 freeway
    - Avoid siting new residential buildings within 300 feet of any existing dry-cleaning operation or large gas station (at least 3.6 million gallons annual throughput) or within 50 feet of a typical gas station (less than 3.6 million gallons annual throughput)
    - Design buildings with varying shapes and heights, building articulations (street frontage design elements like edges and corners that help break up building mass), and open spaces between buildings to encourage air flow
    - Include solid barriers, such as sound walls, or dense vegetation barriers along the I-5 freeway to reduce leeward pollutant concentrations (USEPA, 2015, 2016)
    - Orient buildings adjacent to freeways such that courtyards and residential units with operable windows and balconies face away from the freeway
    - Separate pedestrian walkways from streets and intersections expected to have substantial on-road traffic
    - Site bus stops away from major on-road sources and intersections

- AQ MGMT-17. *Plumbing Fixtures. Reduces GHGs.* The project would use the following plumbing fixtures and appliances:
    - Residential buildings:
        - Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi
        - Standard dishwashers: 4.25 gallons per cycle
        - Compact dishwashers: 3.5 gallons per cycle
        - Clothes washers: water factor of 6 gallons per cubic feet of drum capacity
    - Non-residential buildings:
        - Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code
        - Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code
- AQ MGMT-18. *Fireplaces. Reduces criteria pollutants, HAPs, and GHGs.* The private development would have no wood or gas fireplaces.
- AQ MGMT-19. *Sustainable Building Materials. Reduces GHGs.* Where feasible, the construction contractor would use building materials that have recycled content or are derived from sustainable or rapidly renewable sources.
- AQ MGMT-20. *Passive Cooling. Reduces GHGs.* Where feasible, the project would maximize natural and passive cooling that builds on the proximity of the Pacific Ocean by employing building design that incorporates vents oriented to capture prevailing winds; ceiling vaults; thermal chimneys, etc. to facilitate air movement. Living spaces would be designed to receive adequate ventilation when windows are open.
- AQ MGMT-21. *Innovative Design. Reduces GHGs.* The project would conserve energy use through innovative site design and building orientation that address factors such as sunshade patterns landscape, sunscreens, window sunshades, extended roof eaves, and low emissivity ("low-e") window glass.
- AQ MGMT-22. *Electric Vehicle Charging. Reduces criteria pollutants, HAPs, and GHGs.* The project would include at least 50 percent of the total required listed cabinets, boxes, or enclosures with the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use. This measure applies to both residential and non-residential uses.
- AQ MGMT-23. *Bicycle Parking. Reduces criteria pollutants, HAPs, and GHGs.* The project would provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5) for each non-residential use.
- AQ MGMT-24. *Bicycle Lanes. Reduces criteria pollutants, HAPs, and GHGs.* The project would include dedicated bicycle lanes that connect to other communities and to the regional bicycle network.
- AQ MGMT-25. *Designated Parking. Reduces criteria pollutants, HAPs, and GHGs.* The project would provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles (electric vehicles excluded) in the following quantities for each non-residential use:
    - 0-9 required parking spaces: 0 designated spaces

- 10-25 required parking spaces: 2 designated spaces
- 26-50 required parking spaces: 4 designated spaces
- 51-75 required parking spaces: 6 designated spaces
- 76-100 required parking spaces: 9 designated spaces
- 101-150 required parking spaces: 11 designated spaces
- 151-200 required parking spaces: 18 designated spaces
- >200 required parking spaces: At least 10% of total

The number of required parking spaces is set by the San Diego Municipal Code (Chapter 14).

- AQ MGMT-26. *Transit Passes. Reduces criteria pollutants, HAPs, and GHGs.* The developer would provide discounted transit passes to residents.
- AQ MGMT-27. *Pedestrian Network. Reduces criteria pollutants, HAPs, and GHGs.* The project would be designed to include a complete, functional, and interconnected pedestrian network where feasible.
- AQ MGMT-28. *Employee Shuttle. Reduces criteria pollutants, HAPs, and GHGs.* The Navy would coordinate with SANDAG and Metropolitan Transit System to reduce congestion in Midway - Pacific Highway and adjacent communities from vehicles traveling to and from Naval Base Point Loma facilities through the implementation of a federal- and/or regionally funded employee shuttle between Naval Base Point Loma, NAVWAR, and the Old Town Transit Center during morning and afternoon peak travel periods and provision of parking for Naval Base Point Loma employees at NAVWAR.
- AQ MGMT-29. *Shower Facilities. Reduces criteria pollutants, HAPs, and GHGs.* Each building that would accommodate over 10 non-residential tenant occupants (employees) would include the following changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code:
  - 11-50 employees: 1 shower stall and 2 two-tier lockers.
  - 51-100 employees: 1 shower stall and 3 two-tier lockers.
  - 101-200 employees: 1 shower stall and 4 two-tier lockers.
  - Over 200 employees: 1 shower stall plus 1 additional shower stall for each 200 additional tenant occupants, and 1 two-tier locker plus 1 two-tier locker for each 50 additional tenant occupants.
- AQ MGMT-30. *Transit Stops. Reduces criteria pollutants, HAPs, and GHGs.* The project would accommodate existing or new transit stops that provide convenient access to high activity/density areas and contain comfortable walk and wait environments for customers.
- AQ MGMT-31. *Alternative Fuels (Operation). Reduces criteria pollutants, HAPs, and GHGs.* The Navy shall use alternative fueled or electric mobile operational equipment where feasible.

Potential Mitigation

- AQ MIT-1. Within six months of the completion of the OTC EIS ROD and every three years thereafter until buildout, the Navy shall provide SANDAG with population and employment projections for OTC to assist SANDAG in updating its regional growth projections. Upon SDAPCD request, the Navy shall report an accounting of new project emissions that would occur within San Diego County to demonstrate that these emissions do not exceed the Navy/U.S. Marine Corps emissions growth projections identified in the 2020 Ozone Plan (1.08 and 8.34 tons per day of VOC and NOx).

3.1.5.10 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be no significant air quality impacts on the surrounding environment resulting from implementation of the No Action Alternative or Alternatives 1 through 5.

3.2 Transportation

A transportation system and the associated infrastructure by which it functions includes the public roadway network, various modes of public transportation, airports, railroads, pedestrian/bicycle facilities, and waterborne transportation modes required for the movement of people, materials, and goods. This section evaluates the effects of the Proposed Action Alternatives on the transportation system in the ROI based on the anticipated increases in traffic over baseline conditions. The analysis also considers reductions in vehicle trips based on increased availability of other modes of transportation, especially with added transit options. Section 3.2.2 below defines the ROI for analysis of transportation. The Navy conducted a detailed transportation impact analysis to characterize the affected environment in the ROI (baseline conditions) and to identify and evaluate potential project effects and mitigations. The full results of this technical study are included in Appendix E and summarized below in Sections 3.2.2 and 3.2.3, respectively.

3.2.1 Regulatory Setting

The regulatory setting for transportation includes the following:

- CEQ's regulations for implementing NEPA (40 CFR 1500 et seq.)
- Federal Highway Administration (FHWA's) regulations for implementing NEPA (23 CFR 771)
- Coastal Zone Management Act of 1972 and subsequent California Coastal Act of 1976

Federal law also requires the SANDAG to prepare and update a regional transportation plan every four years. This is required for regions that do not meet emissions standards for identified criteria pollutants. Pursuant to SB 375, SANDAG adopted the 2016-2050 Regional Transportation Plan/Sustainable Communities Strategy. The 2016 plan is an update of the 2012-2035 version of this plan/strategy. The primary goal of these planning documents is to increase mobility for the region's residents and visitors. The 2020 Update is currently in progress.

3.2.2 Affected Environment

3.2.2.1 Approach to Analysis

State departments of transportation and local agencies assign a functional classification to each roadway on the system. Functional classification is the process by which agencies group streets and highways into classes, or systems, according to the character of service they provide. The three main functional classifications for roadways include:

- Major and Minor Arterials – These roadways provide mobility so traffic can move from one place to another quickly and safely.
- Local – These roadways provide access to homes, businesses, and other property.
- Collector – These roadways link arterial and local roads and perform some of the duties of each.

Analysts evaluate various types of transportation facilities to determine operating conditions based on performance metrics most applicable to the facility type. Guidelines often base such performance metrics on how users perceive facility operations and what they experience while traveling (e.g., metrics that quantify operational conditions).

Specific performance metrics used by transportation agencies include delay, density, average daily traffic (ADT), and design capacity. Agencies use these metrics to assign a roadway with a corresponding LOS. The LOS designation is a professional industry standard used to qualitatively describe the operating conditions of a roadway segment or intersection. Caltrans and the City of San Diego developed guidance for analysis of traffic conditions within traffic impact studies, and the analysis in this EIS follows the guidance.

Appendix E includes data collection for existing street segments and signalized and unsignalized intersections including traffic volumes, turning movements, signal-timing patterns, speed limits, availability of on-street parking, bicycle lanes, and roadway geometry. Analysts collected existing weekday traffic counts and AM (7:00–9:00 a.m.) and PM (4:00–6:00 p.m.) peak hour traffic volume counts at the ROI intersections and street segments in January 2020. The study also included evaluation of pedestrian, bicycle, and transit facilities.

Analysts compiled data on existing freeway traffic volumes from the Caltrans 2017 Volumes on California State Highways publication (Caltrans, 2017). Analysts also gathered counts at one ramp meter location from the Freeway Performance Measurement System during the month of September 2019. Caltrans provided additional ramp metering data and information. The study also included transportation planning model trip generation for analysis of the impacts of the Proposed Action Alternatives as outlined later in this document.

3.2.2.2 Region of Influence

Figure 3.2-1 presents the transportation network that comprises the ROI for transportation near OTC and is followed by brief descriptions of each of the primary road segments and intersections. Section 3.2.2.3 describes the current operational conditions on each of these network components.

Interstate 5 is a major north-south Interstate Freeway providing interregional connectivity between San Diego County and Orange and Los Angeles Counties to the north. The freeway has a posted speed limit of 65 miles per hour (mph). Within the ROI, Interstate 5 is generally an 8-lane highway running in the north and south directions (four lanes in each direction) with additional auxiliary lanes (lanes constructed between on- and off-ramps to improve safety and minimize bottlenecks).

Interstate 8 is a major east-west Interstate Freeway providing interregional connectivity between San Diego County and Imperial County to the east. The freeway has a posted speed limit of 65 mph. Within the ROI, Interstate 8 is generally an 8-lane facility running in the east and west directions (four lanes in each direction) with additional auxiliary lanes.

Rosecrans Street is a four- to six-lane roadway oriented in the north and south directions within the ROI and connects Lytton Street to Pacific Highway. North of Pacific Highway, Rosecrans Street transitions into Taylor Street.

From Lytton Street to Sports Arena Boulevard, the Midway-Pacific Highway Community Plan classifies Rosecrans Street as a six-lane Major Arterial. The facility provides bike lanes on both sides of Rosecrans Street between Malaga Street and Sports Arena Boulevard. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 35 mph.

From Sports Arena Boulevard to Pacific Highway, the Midway-Pacific Highway Community Plan classifies Rosecrans Street as a four-lane Collector with a center two-way left-turn lane. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 35 mph.

Taylor Street transitions from a two-lane to a five-lane roadway oriented in the north and south directions within the ROI. This segment connects Pacific Highway to Hotel Circle South. South of Pacific Highway, Taylor Street transitions into Rosecrans Street.

From Pacific Highway to Juan Street, the Old Town Community Plan classifies Taylor Street as a four to five-lane Major Arterial. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 35 mph.

From Juan Street to Morena Boulevard, the Old Town Community Plan classifies Taylor Street as a four-lane Major Arterial. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 35 mph.

From Morena Boulevard to Hotel Circle South, the Old Town Community Plan classifies Taylor Street as a two-lane Collector. This facility segment provides Class II bike lanes on both sides of Taylor Street. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 35 mph.

Hotel Circle South is classified by the Mission Valley Community Plan as a two-lane Collector. The roadway is currently constructed as a two-lane undivided roadway (two-way). The design of this facility intermittently permits on-street parking on the south side of the road. The posted speed limit on the facility is 35 mph.

Pacific Highway is primarily a six-lane roadway oriented in a north-south direction within the ROI, from Taylor Street to Laurel Street. Pacific Highway runs parallel to Interstate 5 and provides direct access to the project site.

From Taylor Street to Sports Arena Boulevard, the Midway-Pacific Highway Community Plan classifies Pacific Highway as a six-lane Major Arterial with a raised median. The facility provides bike lanes on both sides of Pacific Highway. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 45 mph.

From Sports Arena Boulevard to Barnett Avenue, the Midway-Pacific Highway Community Plan classifies Pacific Highway as a five-lane Major Arterial with a raised median. This section of Pacific Highway only provides bike lanes in the northbound direction and within a 200-foot section near the signalized intersection at Enterprise Street. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 45 mph.

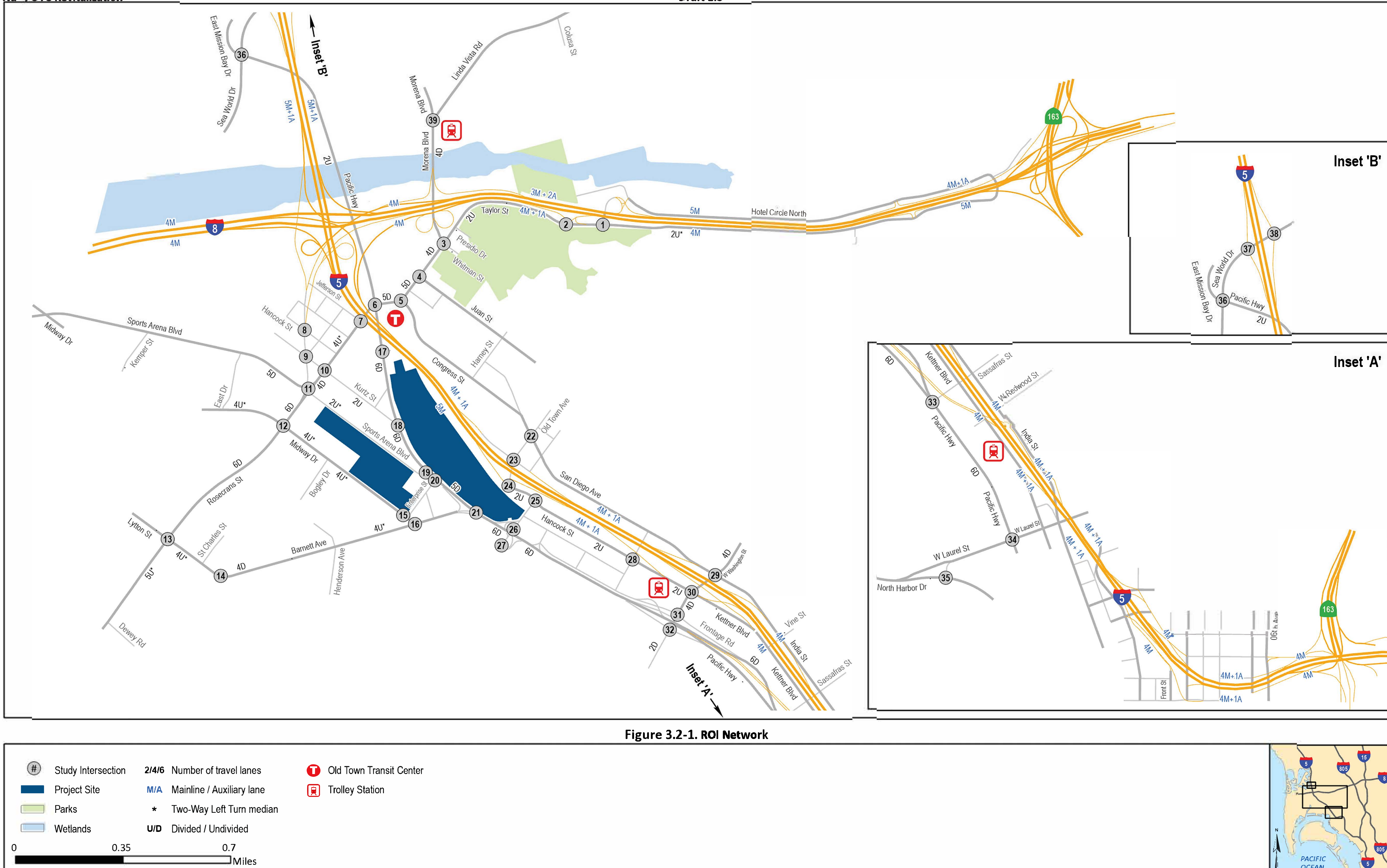


Figure 3.2-1. ROI Network

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From Barnett Avenue to Washington Street, the Midway-Pacific Highway Community Plan classifies Pacific Highway as a six-lane Expressway. It includes a flyover (grade separated) ramp for vehicles in the northbound direction traveling to Barnett Avenue.

Currently, the facility provides on- and off-ramps to the Witherby Street undercrossing, which leads to Interstate 5 via Hancock Street. The segment does not provide Class II bike lanes on either side of the road along this section of Pacific Highway. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 55 mph.

From Washington Street to Sassafras Street, the Midway-Pacific Highway Community Plan classifies Pacific Highway as a six-lane Prime Arterial. It includes a flyover on-ramp for southbound vehicles traveling to southbound Interstate 5 and a flyover off-ramp for northbound Interstate 5 vehicles traveling to northbound Pacific Highway. This section of Pacific Highway does not provide Class II bike lanes on either side of the road. Local laws prohibit on-street parking on both sides of the roadway and the posted speed limit is 45 mph.

From Sassafras Street to Laurel Street, the Midway-Pacific Highway Community Plan classifies Pacific Highway as a six-lane Major Arterial. This facility does not provide Class II bike lanes on either side of the road. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 45 mph.

Morena Boulevard is classified by the Old Town Community Plan as a three-lane Major Arterial. Within the ROI and between the Interstate 8 Ramps and Taylor Street, Morena Boulevard is generally a four-lane divided roadway. This segment does not provide Class II bike lanes on either side of the road. Local laws prohibit on-street parking on both sides of the roadway. There are no posted speed limit signs on this segment.

Kurtz Street is classified by the Midway-Pacific Highway Community Plan as a two-lane Collector. This roadway does not provide Class II bike lanes on either side of the road. The design of this segment permits on-street parallel parking on both sides of the roadway. The posted speed limit is 30 mph.

Sports Arena Boulevard transitions from a two-lane to a five-lane roadway oriented in a north-south direction within the ROI from Kemper Street to Enterprise Street. Sports Arena Boulevard provides vehicular and pedestrian access to the project site's existing North and West parking lots.

From Kemper Street to Rosecrans Street, the Midway-Pacific Highway Community Plan classifies Sports Arena Boulevard as a five-lane Major Arterial with a raised median. This section of Sports Arena Boulevard does not provide Class II bike lanes on either side of the road. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 35 mph.

From Rosecrans Street to Enterprise Street, the Midway-Pacific Highway Community Plan classifies Sports Arena Boulevard as a two-lane Collector. This section of Sports Arena Boulevard does not provide Class II bike lanes on either side of the road. The roadway design permits on-street parallel parking on both sides of the roadway, and the posted speed limit is 35 mph.

Enterprise Street functions as a two-lane Collector with a center two-way left-turn lane from Pacific Highway to Midway Drive. The Midway-Pacific Highway Community Plan does not classify this roadway. Enterprise Street provides vehicular and pedestrian access to OTC's existing West parking lot. This segment includes sidewalks and provides angled parking along both sides of the road, and there is no posted speed limit on this roadway.

Midway Drive is classified by the Midway-Pacific Highway Community Plan as a four-lane Collector with a center two-way left-turn lane. The facility design includes intermittent sections of on-street parking on the south side of the road. This roadway segment does not provide Class II bike lanes on either side of the road, and the posted speed limit is 35 mph.

Lytton Street is classified by the Midway-Pacific Highway Community Plan as a four-lane Collector with a center two-way left-turn lane. This segment does not provide Class II bike lanes on either side of the road. Local laws prohibit on-street parking on both sides of the roadway. The posted speed limit is 40 mph. East of Truxtun Road, Lytton Street transitions into Barnett Avenue.

Barnett Avenue is classified by *the* Midway-Pacific Highway Community Plan as a four-lane Collector with a center two-way left-turn lane. The section of this roadway between Truxtun Road and Henderson Avenue includes a raised median and Class II bike lanes. Local laws prohibit on-street parking on both sides of the roadway, and the posted speed limit is 40 mph. West of Truxtun Road, Barnett Avenue transitions into Lytton Street.

Hancock Street is classified by the Midway-Pacific Highway Community Plan as a two-lane Collector. This roadway segment does not provide Class II bike lanes on either side of the road. The facility design permits on-street parking on both sides of the roadway, including parallel parking on the north side and diagonal parking on the south side. West of Noell Street, Hancock transitions from a two-lane, two-way street to a one-way (eastbound), two-lane street. The posted speed limit on this facility is 30 mph.

Washington Street is classified by the Midway-Pacific Highway Community Plan as a four-lane Major Arterial between Frontage Road and Hancock Street. North of India Street, Washington Street is a four-lane Major Arterial per the Uptown Community Plan. Portions of Washington Street north of India Street provide bike lanes. Local laws generally prohibit on-street parking with the exception of a small segment between San Diego Avenue just north of India Street. South of India Street the posted speed limit is 25 mph. There are no posted speed limit signs on Washington Street north of India Street.

3.2.2.3 Existing Operational Conditions

LOS is a qualitative measurement of operational conditions based on factors such as speed, travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The Highway Capacity Manual (Transportation Research Board, 2016) defines six categories of LOS that reflect the operating conditions for the facility and the magnitude of traffic congestion. The Highway Capacity Manual assigns letter designations “A” to “F”, with “A” representing free-flow operating conditions, and “F” representing congested conditions. Table 3.2-1 further describes traffic operating conditions within each LOS category.

Table 3.2-1 Highway Capacity Manual Level of Service Descriptions

LOS	*Operating Conditions*	*Delay*
A	Highest quality of service; free traffic flow, low volumes and densities; little or no restriction on maneuverability or speed.	None
B	Stable traffic flow; speed becoming slightly restricted; low restriction on maneuverability.	None
C	Stable traffic flow, but less freedom to select speed, change lanes, or pass; density increasing. LOS A though C generally meet Caltrans' desired LOS threshold.	Minimal
D	Approaching unstable flow; speeds tolerable but subject to sudden and considerable variation; less maneuverability and driver comfort. The City of San Diego considers LOS D or better acceptable for transportation impacts.	Minimal
E	Unstable traffic flow with rapidly fluctuating speeds and flow rates; short headways, low maneuverability, and lower driver comfort.	Increasing
F	Forced traffic flow; speed and flow may drop to zero with high densities.	Considerable

Legend: LOS = Level of Service.
Source: Transportation Research Board Highway Capacity Manual; Caltrans Guide for Preparation of Traffic Impact Studies; City of San Diego CEQA Significance Determination Thresholds.

Transportation agencies define the acceptable thresholds for LOS as a policy decision. Larger urban areas may set thresholds based on volumes of traffic during peak hours (e.g., LOS D and better is acceptable), while areas with lower traffic levels may reach an unacceptable condition at a better LOS (e.g., only LOS C and better is acceptable) based on agency policy. LOS E is the condition at which the facility has reached capacity.

Using 2020 turning movement data collected at each intersection and ADT on each street segment, this EIS evaluated existing conditions based on common traffic flow parameters for both interrupted (signalized and stop controlled intersections) and uninterrupted flow facilities (multi-lane highways). For interrupted flow facilities, the analysis used control delay as the primary metric to define the LOS of each facility. Control delay is the total delay brought about by the presence of a traffic control device (80 seconds and 50 seconds for a signalized intersection or stop controlled intersection to reach LOS F, respectively). For uninterrupted flow facilities, the analysis used density and volume to capacity (V/C) ratio to determine LOS. These metrics provided a summary of the operational conditions of roads and intersections in the area for comparison with conditions expected after implementation of each of the Proposed Action Alternatives. Analysts developed these metrics based on driver expectations for travel. Key stakeholders who have interest, own, and/or maintain these facilities include the Navy, Caltrans, the FHWA, the City of San Diego, San Diego County, and SANDAG.

The Navy analyzed intersections and road segments using the 2016 Highway Capacity Manual (Transportation Research Board, 2016), with the assistance of the Synchro (version 10) computer software. This software enables analysis of control delay, LOS, and V/C ratios for intersections and road segments. Control delay results from the type of control at the intersection, such as a traffic signal or a stop sign, as measured by comparison with the uncontrolled condition. Capacity is the maximum rate of flow that can pass through an intersection under prevailing traffic and road conditions. The sum of all critical movements (i.e., left turns, right turns, or through movements) on a critical lane basis is used to determine the total intersection V/C ratio and corresponding LOS. An intersection or road is at capacity (V/C ratio of 1.0) when flow decreases due to congested conditions. The V/C ratio is based on traffic volumes by lane, signal phase timing patterns, and approach lane configuration. Analysis of freeways and multi-lane highways is based on density of traffic.

Caltrans guidelines for traffic impact analysis (Caltrans, 2002) strive to maintain LOS C for state highways[8]. The Caltrans threshold for acceptable LOS is between LOS C and LOS D. The Caltrans and City of San Diego guidelines also outline the total number of trips created by a proposed action that warrants the development of a traffic impact study. In addition, transportation facilities with an existing LOS E (at capacity) or LOS F (saturated conditions) are of particular importance due to their impacts to operational conditions, especially when projects add trips and has potential to further degrade conditions.

Table 3.2-2 presents the existing conditions for intersections within the ROI network shown in Figure 3.2-1.

Table 3.2-2 Baseline Operating Conditions for Intersections in the ROI

Intersection	*Control Type*	*Peak Hour*	*Existing Delay[(a)]*	*Existing LOS*
1. Taylor Street/Hotel Circle South	AWSC[(b)]	AM	9.9	A
1. Taylor Street/Hotel Circle South	AWSC[(b)]	PM	14.5	B
2. Taylor Street/Interstate 8 EB Ramps	Signal	AM	13.9	B
2. Taylor Street/Interstate 8 EB Ramps	Signal	PM	22.1	C
3. Taylor Street/Morena Boulevard/Whitman Street	Signal	AM	14.2	B
3. Taylor Street/Morena Boulevard/Whitman Street	Signal	PM	12.1	B
4. Taylor Street/Juan Street	Signal	AM	11.9	B
4. Taylor Street/Juan Street	Signal	PM	28.8	C
5. Congress Street/Taylor Street	Signal	AM	7.0	A
5. Congress Street/Taylor Street	Signal	PM	13.2	B
6. Pacific Highway/Rosecrans Street/Taylor Street	Signal	AM	38.4	D
6. Pacific Highway/Rosecrans Street/Taylor Street	Signal	PM	60.0	E
7. Rosecrans Street/Jefferson Street	TWSC[(c)]	AM	14.9	B
7. Rosecrans Street/Jefferson Street	TWSC[(c)]	PM	19.0	C
8. Camino Del Rio West/Hancock Street	Signal	AM	26.6	C
8. Camino Del Rio West/Hancock Street	Signal	PM	13.6	B
9. Camino Del Rio West/Kurtz Street	Signal	AM	7.2	A
9. Camino Del Rio West/Kurtz Street	Signal	PM	10.1	B
10. Rosecrans Street/Kurtz Street	Signal	AM	9.6	A
10. Rosecrans Street/Kurtz Street	Signal	PM	19.5	B
11. Rosecrans Street/Sports Arena Boulevard/ Camino Del Rio West	Signal	AM	13.6	B
11. Rosecrans Street/Sports Arena Boulevard/ Camino Del Rio West	Signal	PM	41.5	D
12. Rosecrans Street/Midway Drive	Signal	AM	33.9	C
12. Rosecrans Street/Midway Drive	Signal	PM	47.5	D
13. Rosecrans Street/Midway Dr	Signal	AM	46.1	D

8 Caltrans is developing guidance for use of vehicle miles traveled as the CEQA transportation metric for projects on the State highway system. Caltrans anticipates full implementation by mid-2020.

Intersection	*Control Type*	*Peak Hour*	*Existing Delay*[(a)]	*Existing LOS*
13. Rosecrans Street/Midway Drive	Signal	PM	52.9	D
14. Truxtun Road/Lytton Street/Barnett Avenue	Signal	AM	36.4	D
14. Truxtun Road/Lytton Street/Barnett Avenue	Signal	PM	67.2	E
15. Midway Drive/Enterprise Street	Signal	AM	12.6	B
15. Midway Drive/Enterprise Street	Signal	PM	13.7	B
16. Barnett Avenue/Midway Drive	Signal	AM	7.7	A
16. Barnett Avenue/Midway Drive	Signal	PM	9.2	A
17. Pacific Highway/Telegraph Place	Signal	AM	10.8	B
17. Pacific Highway/Telegraph Place	Signal	PM	10.2	B
18. Pacific Highway/Kurtz Street	Signal	AM	15.8	C
18. Pacific Highway/Kurtz Street	Signal	PM	48.8	E
19. Sports Arena Boulevard/Pacific Highway	Signal	AM	11.2	B
19. Sports Arena Boulevard/Pacific Highway	Signal	PM	16.0	C
20. Pacific Highway/Enterprise Street	Signal	AM	67.4	E
20. Pacific Highway/Enterprise Street	Signal	PM	67.2	E
21. Pacific Highway/Barnett Avenue	Grade Separated	AM	N/A	N/A
21. Pacific Highway/Barnett Avenue	Grade Separated	PM	N/A	N/A
22. Old Town Avenue/San Diego Avenue	Signal	AM	10.5	B
22. Old Town Avenue/San Diego Avenue	Signal	PM	10.2	B
23. Old Town Avenue/Moore Street	Signal	AM	17.2	B
23. Old Town Avenue/Moore Street	Signal	PM	23.6	C
24. Hancock Street/Old Town Avenue/Interstate 5 SB Off-Ramps	AWSC	AM	19.4	C
24. Hancock Street/Old Town Avenue/Interstate 5 SB Off-Ramps	AWSC	PM	16.1	C
25. Witherby Street/Hancock Street	AWSC	AM	13.2	B
25. Witherby Street/Hancock Street	AWSC	PM	17.7	C
26. Witherby Street/Pacific Highway	AWSC	AM	12.1	B
26. Witherby Street/Pacific Highway	AWSC	PM	23.2	C
27. Tripoli Avenue/Witherby Street	AWSC	AM	9.7	A
27. Tripoli Avenue/Witherby Street	AWSC	PM	12.4	B
28. Noell Street/Hancock Street	AWSC	AM	9.2	A
28. Noell Street/Hancock Street	AWSC	PM	11.1	B
29. Washington Street/San Diego Avenue	Signal	AM	22.9	C
29. Washington Street/San Diego Avenue	Signal	PM	12.6	B
30. Washington Street/Hancock Street	Signal	AM	23.9	C
30. Washington Street/Hancock Street	Signal	PM	26.0	C
31. Washington Street/Pacific Highway (North)	Signal	AM	11.4	B
31. Washington Street/Pacific Highway (North)	Signal	PM	14.3	B
32. Washington Street/Pacific Hwy (South)	Signal	AM	11.7	B
32. Washington Street/Pacific Highway (South)	Signal	PM	12.6	B
33. Pacific Highway/Sassafras Street	Signal	AM	23.5	C
33. Pacific Highway/Sassafras Street	Signal	PM	34.9	C
34. Pacific Highway/Laurel Street	Signal	AM	45.4	D
34. Pacific Highway/Laurel Street	Signal	PM	47.3	D
35. Harbor Drive/Laurel Street	Signal	AM	27.5	C
35. Harbor Drive/Laurel Street	Signal	PM	30.0	C
36. Pacific Highway/Sea World Drive	Signal	AM	18.5	B

Intersection	*Control Type*	*Peak Hour*	*Existing Delay*[(a)]	*Existing LOS*
36. Pacific Highway/Sea World Drive	Signal	PM	40.3	D
37. Sea World Drive/Interstate 5 SB Ramps	Signal	AM	21.2	C
37. Sea World Drive/Interstate 5 SB Ramps	Signal	PM	23.2	C
38. Sea World Drive/Interstate 5 NB Ramps	Signal	AM	33.3	C
38. Sea World Drive/Interstate 5 NB Ramps	Signal	PM	48.8	D
39. Morena Boulevard/Linda Vista Road	Signal	AM	16.2	B
39. Morena Boulevard/Linda Vista Road	Signal	PM	22.8	C

Legend: AWSC = all-way stop control; EB = eastbound; LOS = Level of Service; NB = Northbound; SB = southbound; TWSC = two-way stop control.

Notes: [(a)] Average delay expressed in seconds per vehicle.

[(b)] All-way stop control. Average delay reported.

[(c)] Two-way stop control. Worst critical movement delay reported.

Source: Appendix E.

Table 3.2-3 highlights the existing conditions for road segments within the ROI network and includes functional classification for each roadway (roadway type), the capacity where each road segment experiences LOS E (defined by local agency guidelines as unacceptable LOS), actual volumes, existing LOS, and V/C ratio. As previously noted, a V/C ratio at or greater than 1 indicates saturated conditions where the facility segment experiences unstable, congested conditions.

Table 3.2-3 Baseline Operating Conditions for Roadway Segments in the ROI

Segment	*Functional Classification*[(a)]	*LOS E*[(b)] *Capacity*	*Volume*	*LOS*	*V/C Ratio*
Rosecrans Street	-	-	-	-	-
1. Dewey Road to Lytton Street	5-Lane Collector (TWLTL)	37,500	52,330	F	1.395
2. Lytton Street to Midway Drive	6-Lane Major	50,000	51,905	F	1.038
3. Midway Drive to Sports Arena Boulevard	6-Lane Major	50,000	59,414	F	1.188
4. Sports Arena Boulevard to Kurtz Street	4-Lane Collector (TWLTL)	30,000	21,875	D	0.729
5. Kurtz Street to Pacific Highway	4-Lane Collector (TWLTL)	30,000	13,689	B	0.456
Taylor Street	-	-	-	-	-
6. Pacific Highway to Congress Street	5-Lane Major (Raised Median)	45,000	18,603	B	0.413
7. Congress Street to Juan Street	5-Lane Major (Raised Median)	45,000	15,530	A	0.345
8. Juan Street to Morena Boulevard	4-Lane Major (Raised Median)	40,000	14,928	A	0.373
9. Morena Boulevard to Interstate 8 East Ramp	2-Lane Collector	10,000	14,757	F	1.476
Hotel Circle South	-	-	-	-	-
10. Interstate 8 East Ramp to Bachman Place	2-Lane Collector (TWLTL)	15,000	7,504	C	0.500
Pacific Highway	-	-	-	-	-
11. Sea World Drive to Taylor Street	2-Lane Collector (TWLTL)	15,000	7,190	C	0.479
12. Taylor Street to Kurtz Street	6-Lane Major (Raised Median)	50,000	12,480	A	0.250
13. Kurtz Street to Sports Arena Boulevard	6-Lane Major (Raised Median)	50,000	21,839	B	0.437
14. Sports Arena Boulevard to Barnett Avenue	5-Lane Prime Arterial	50,000	24,952	B	0.499
15. Barnett Avenue to Witherby Street	Expressway	80,000	66,358	D	0.829
16. Witherby Street to West Washington Street	Expressway	80,000	61,513	D	0.769

Segment	*Functional Classification*[(a)]	*LOS E*[(b)] *Capacity*	*Volume*	*LOS*	*V/C Ratio*
17. West Washington Street to Sassafras Street	6-Lane Prime Arterial	60,000	13,198	A	0.220
18. Sassafras Street to West Laurel Street	6-Lane Major (Raised Median)	50,000	18,261	A	0.365
Morena Boulevard	-	-	-	-	-
19. Friars Road to Interstate 8 Ramps	4-Lane Major (Raised Median)	40,000	42,465	F	1.062
Linda Vista Road	-	-	-	-	-
20. Morena Boulevard to Colusa Street	4-Lane Collector (TWLTL)	30,000	27,000	E	0.900
Kurtz Street	-	-	-	-	-
21. Rosecrans to Pacific Highway	2-Lane Collector (WP)	8,000	11,142	F	1.393
Sports Arena Boulevard	-	-	-	-	-
22. Point Loma Boulevard/Midway Drive to Kemper Street	5-Lane Collector (TWLTL)	37,500	18,490	C	0.493
23. Kemper Street to East Drive	5-Lane Major (Raised Median)	45,000	21,790	B	0.484
24. East Drive to Rosecrans Street	5-Lane Major (Raised Median)	45,000	25,900	C	0.576
25. Rosecrans Street to Enterprise Street	2-Lane Collector (WP)	8,000	1,877	A	0.235
Midway Drive	-	-	-	-	-
26. East Drive to Rosecrans Street	4-Lane Collector (TWLTL)	30,000	30,934	F	1.031
27. Rosecrans Street to Bogley Drive	4-Lane Collector (TWLTL)	30,000	22,283	D	0.743
28. Bogley Drive to Barnett Avenue	4-Lane Collector (TWLTL)	30,000	20,056	D	0.669
Lytton Street	-	-	-	-	-
29. Rosecrans Street to Truxtun Road	4-Lane Collector (TWLTL)	30,000	28,042	E	0.935
Barnett Avenue	-	-	-	-	-
30. Truxtun Road to Henderson Avenue	4-Lane Collector (Raised Median)	30,000	28,568	E	0.952
31. Henderson Avenue to Pacific Highway	4-Lane Collector (TWLTL)	30,000	30,263	F	1.009
Hancock Street	-	-	-	-	-
32. Old Town Avenue to Witherby Street	2-Lane Collector (WP)	8,000	8,903	F	1.113
33. Witherby Street to Noell Street	2-Lane Collector (WP)	8,000	4,428	C	0.554
34. Noell Street to West Washington Street	2-Lane Collector (WP)	8,000	14,457	F	1.807
West Washington Street	-	-	-	-	-
35. Admiral Boland Way to Pacific Highway	2-Lane Collector	8,000	16,542	F	2.068
36. Pacific Highway to Hancock Street	4-Lane Major (Raised Median)	40,000	20,289	B	0.507
37. Hancock Street to West University Avenue	4-Lane Major (Raised Median)	40,000	27,007	C	0.675

Legend: LOS = Level of Service; V/C = volume to capacity; - = no data for this cell.
Notes: [(a)] The City of San Diego roadway classification at which the roadway currently functions.
[(b)] The capacity of the roadway at LOS E.
Source: Appendix E.

Table 3.2-4 highlights the existing conditions for limited access highway segments (freeways) within the ROI network. The table includes annual average daily traffic, or the total traffic as observed throughout the year divided by the number of days in the year. The additional factors in the table include the K-factor and D-factor, or the percentage of traffic during the peak hour and the directional distribution (percentage traveling north, south, east, or west), respectively. The table also includes density in vehicles per mile, the primary metric used to determine LOS for a freeway or multi-lane highway segment.

The analysis in Appendix E also evaluated the northbound Interstate 5 on-ramp at Moore Street, which is metered during the morning and afternoon peak hours. Agencies use ramp metering to control the flow of traffic onto a freeway segment from an on-ramp to improve safety, traffic operations, and traffic flow. Increases in traffic accessing the freeway from an on-ramp could affect traffic operations and cause queues onto the local street network. Since the freeway segment downstream of the ramp meter location operates at an acceptable LOS, the on-ramp also operates at an acceptable delay under the existing condition. Additional information on the Caltrans ramp metering at this location is included in Appendix E.

Safety performance of transportation facilities within the ROI is affected by added traffic, especially due to added queues on high-speed facilities during peak periods when congestion exists. The data show no fatal crashes during the 5-year period from 2013 through 2017.

Appendix E also evaluated pedestrian and bicycle conditions within the ROI network. For pedestrians, the inventory included facilities within a minimum of 0.5-mile walking distance from OTC and included pedestrian counts at the ROI intersections with categorization of low activity, average activity, or high activity.

The following study intersections were categorized as “high” pedestrian activity locations for qualitative assessment of potential impacts:

- Intersection #5. Taylor Street/Congress Street
- Intersection #6. Rosecrans Street/Taylor Street/Pacific Highway
- Intersection #7. Rosecrans Street/Jefferson Street
- Intersection #10. Rosecrans Street/Kurtz Street
- Intersection #11. Rosecrans Street/Sports Arena Boulevard
- Intersection #20. Pacific Highway/Enterprise Street
- Intersection #22. Old Town Avenue/San Diego Avenue
- Intersection #28. Hancock Street/Noell Street
- Intersection #30. Washington Street/Hancock Street
- Intersection #31. Pacific Highway (N)/Frontage Road/Washington Street

The study also categorized bicycle facilities based on layout and their shared or exclusive right-of-way. The analysis included bicycle counts at ROI intersections, with categorization of low activity, average activity, or high activity.

The following study intersections were categorized as “high” bicycle activity locations for qualitative assessment of potential impacts:

- Intersection #3. Taylor Street/Morena Boulevard
- Intersection #4. Taylor Street/Juan Street
- Intersection #5. Taylor Street/Congress Street
- Intersection #6. Rosecrans Street/Taylor Street/Pacific Highway
- Intersection #7. Rosecrans Street/Jefferson Street
- Intersection #10. Rosecrans Street/Kurtz Street
- Intersection #11. Rosecrans Street/Sports Arena Boulevard

Table 3.2-4 Baseline Operating Conditions for Freeway Segments in the ROI

Freeway Segment	*Direction*	*# of Lanes[(a)]*	*AADT[(b)]*	*K (AM)*	*K (PM)*	*D (AM)*	*D (PM)*	*T[(f)]*	*Peak Hour Traffic[(c)] (AM)*	*Peak Hour Traffic[(c)] (AM)*	*V/C Ratio[(d)] (AM)*	*V/C Ratio[(d)] (PM)*	*Density[(e)] (AM)*	*Density[(e)] (PM)*	*LOS (AM)*	*LOS (PM)*
Interstate 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1. Sea World Drive to Interstate 8	NB	5 Main + 1 Aux	194,000	0.0700	0.0758	0.4516	0.4144	3.4%	6,133	6,094	0.52	0.52	18.3	18.2	C	D
1. Sea World Drive to Interstate 8	SB	5 Main + 1 Aux	194,000	0.0700	0.0758	0.5856	0.5856	3.4%	7,447	8,611	0.63	0.73	22.2	26.1	D	D
2. Interstate 8 to Old Town Avenue	NB	4 Main + 1 Aux	208,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,046	7,510	0.73	0.78	25.8	28.1	C	D
2. Interstate 8 to Old Town Avenue	SB	5 Main	208,000	0.0724	0.0746	0.5321	0.5160	4.1%	8,013	8,007	0.79	0.79	29.7	29.6	D	D
3. Old Town Avenue to Washington Street	NB	4 Main + 1 Aux	206,000	0.0724	0.0746	0.4679	0.4840	4.1%	6,978	7,438	0.73	0.77	25.6	27.9	C	D
3. Old Town Avenue to Washington Street	SB	4 Main + 1 Aux	206,000	0.0724	0.0746	0.5321	0.5160	4.1%	7,936	7,930	0.82	0.82	30.6	30.5	D	D
4. Washington Street to Sassafras Street	NB	4 Main	156,000	0.0724	0.0746	0.4679	0.4840	4.1%	5,285	5,633	0.65	0.70	23.9	25.6	C	C
4. Washington Street to Sassafras Street	SB	4 Main	156,000	0.0724	0.0746	0.5321	0.5160	4.1%	6,010	6,005	0.74	0.74	27.3	27.3	D	D
5. Sassafras Street to Pacific Highway Viaduct	NB	4 Main	160,000	0.0724	0.0746	0.4679	0.4840	4.1%	5,420	5,777	0.67	0.72	24.5	26.3	C	D
5. Sassafras Street to Pacific Highway Viaduct	SB	4 Main	160,000	0.0724	0.0746	0.5321	0.5160	4.1%	6,164	6,159	0.76	0.76	28.3	28.3	D	D
6. Pacific Highway Viaduct to Laurel Street	NB	4 Main + 1 Aux	207,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,012	7,474	0.73	0.78	25.9	28.2	C	D
6. Pacific Highway Viaduct to Laurel Street	SB	4 Main + 1 Aux	207,000	0.0724	0.0746	0.5321	0.5160	4.1%	7,974	7,968	0.83	0.83	30.9	30.9	D	D
7. Laurel Street to Hawthorn Street	NB	4 Main + 1 Aux	207,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,012	7,474	0.73	0.78	26.2	28.4	D	D
7. Laurel Street to Hawthorn Street	SB	4 Main + 1 Aux	207,000	0.0724	0.0746	0.5321	0.5160	4.1%	7,974	7,968	0.84	0.84	31.5	31.5	D	D
8. Hawthorn Street to 1st Avenue	NB	4 Main	174,000	0.0724	0.0746	0.4679	0.4840	4.1%	5,894	6,283	0.74	0.79	27.8	29.9	D	D
8. Hawthorn Street to 1st Avenue	SB	4 Main	174,000	0.0724	0.0746	0.5321	0.5160	4.1%	6,703	6,698	0.84	0.84	32.5	32.5	D	D
9. 1st Avenue to 6th Avenue	NB	5 Main	219,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,419	7,907	0.74	0.79	28.0	30.2	D	D
9. 1st Avenue to 6th Avenue	SB	5 Main	219,000	0.0724	0.0746	0.5321	0.5160	4.1%	8,437	8,430	0.84	0.84	33.1	33.0	D	D
10. 6th Avenue to State Route-163	NB	5 Main	219,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,419	7,907	0.74	0.79	28.0	30.2	D	D
10. 6th Avenue to State Route-163	SB	5 Main	219,000	0.0724	0.0746	0.5321	0.5160	4.1%	8,437	8,430	0.84	0.84	33.0	32.9	D	D
Interstate 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11. West Mission Bay Drive/Midway Drive to Interstate 5	EB	4 Main	103,000	0.0746	0.0659	0.4407	0.3903	2.8%	3,386	2,649	0.41	0.32	14.9	11.6	B	B
11. West Mission Bay Drive/Midway Drive to Interstate 5	WB	4 Main	103,000	0.0746	0.0659	0.5593	0.6097	2.8%	4,298	4,138	0.52	0.50	18.5	17.8	C	B
12. Interstate 5 to Morena Boulevard	EB	4 Main	135,000	0.0705	0.0716	0.4147	0.5601	2.8%	3,947	5,414	0.48	0.66	17.5	24.1	B	C
12. Interstate 5 to Morena Boulevard	WB	3 Main	135,000	0.0705	0.0716	0.5853	0.4399	2.8%	5,571	4,252	0.91	0.69	36.6	25.0	E	C
13. Morena Boulevard to Hotel Circle/Taylor Street	EB	4 Main + 1 Aux	196,000	0.0705	0.0716	0.4147	0.5601	2.8%	5,730	7,860	0.59	0.81	20.5	29.8	C	D
13. Morena Boulevard to Hotel Circle/Taylor Street	WB	5 Main	196,000	0.0705	0.0716	0.5853	0.4399	2.8%	8,088	6,173	0.91	0.69	35.3	22.5	E	C
14. Taylor Street to Hotel Circle	EB	4 Main	201,000	0.0705	0.0716	0.4147	0.5601	2.8%	5,877	8,061	0.72	0.99	26.8	43.8	D	E
14. Taylor Street to Hotel Circle	WB	5 Main	201,000	0.0705	0.0716	0.5853	0.4399	2.8%	8,294	6,331	0.81	0.62	30.9	22.7	D	C
15. Hotel Circle to State Route-163	EB	4 Main	217,000	0.0705	0.0716	0.4147	0.5601	2.8%	6,344	8,702	0.78	1.07	29.3	N/A	D	F
15. Hotel Circle to State Route-163	WB	5 Main	217,000	0.0705	0.0716	0.5853	0.4399	2.8%	8,954	6,835	0.88	0.67	34.9	24.8	D	C

Legend: % = percent; LOS = Level of Service; Main = Mainline; Aux = Auxiliary; N/A = not applicable; V/C = volume to capacity; NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; K = Proportion of AADT in the Analysis Hour; D = Direction Distribution; T = Truck Percentage; - = no data for cell.

Notes: (a) Lane geometry taken from Performance Measurement System (PeMS) lane configurations at corresponding postmile.
(b) Existing ADT volumes from most recent Caltrans Traffic Census Program (2017) and grown to Year 2019 using five years of historical Caltrans data.
(c) Peak hour volumes calculated from K and D factors provided in most recent Caltrans Traffic Census Program Peak Hour Volume Data (2016).
(d) V/C = (Peak Hour Volume/Hourly Capacity).
(e) Density measures passenger cars per mile per lane. Density = Flow Rate (passenger cars/hour/lane) / Speed (average passenger-car speed in mph).
(f) Truck factor sourced to most recent Caltrans Traffic Census Program Peak Hour Volume Data (2016).

Source: Appendix E.

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Local and regional public transit options are also provided within the ROI. The Old Town Transit Center is a focal point for transit access in Old Town San Diego and adjacent communities. The Center provides for the interchange of various transit routes and travel modes. The Center includes transit services provided by the San Diego Metropolitan Transit System, the North County Transit District, and Amtrak networks. Below is a brief description of the transit services:

- *Metropolitan Transit System Bus* – The Metropolitan Transit System bus provides local and regional connections between neighborhoods and cities. 11 Metropolitan Transit System bus routes serve the ROI.
- *Metropolitan Transit System Trolley* – The Metropolitan Transit System Trolley is a light rail system that connects the eastern and southern areas of San Diego County with the Downton region. The Sycuan Green Line travels east and west and is the only trolley route serving the ROI. The Sycuan Green Line operates between the City of Santee and Downtown San Diego.
- *North County Transit District Coaster* – The North County Transit District Coaster is a commuter train that travels north and south, connecting Oceanside to San Diego.
- *Amtrak* – Amtrak is a national rail service with route connections between 46 states, the District of Columbia, and three Canadian provinces.

3.2.3 Environmental Consequences

To evaluate the potential impacts from the Proposed Action Alternatives, the Navy and SANDAG used a regional transportation model to estimate future trips on the network. The SANDAG transportation model provides a systematic analytical platform used to evaluate different alternatives and inputs in an iterative and controlled environment. The enhanced industry standard four-step transportation model includes trip generation based on land use, trip distribution, mode choice, and network assignment. In addition to estimates of trips added to the network for use in analysis of future traffic conditions, the model also estimates vehicle miles traveled for each scenario. SANDAG generated the model results based on the development conditions for each alternative. When added to baseline traffic for future years, analysts developed estimates of impacts to the ROI based on each alternative and quantified the results similar to the existing conditions analysis.

To generate trips, analysts used the City of San Diego Trip General Manual to determine appropriate rates based on land use. Table 3.2-5 outlines the land uses and densities for the trip generation calculations for each alternative.

Table 3.2-5 Proposed Action Land Uses and Densities

Land Use	*Unit*	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Navy Recapitalization or Development	KSF	1,876	1,064	1,064	1,064	1,064
Multi-family Residential	DU	N/A	6,600	4,400	10,000	8,000
Community Retail	KSF	N/A	180	130	250	200
Commercial Office	KSF	N/A	1,000	650	1,350	850
Hotel	Rooms	N/A	400	250	450	450
Transit Center	N/A	No	No	No	Yes	Yes

Legend: KSF = 1,000 Square Feet; DU = Dwelling Unit; N/A = Not Applicable.
Notes: Additional land use square footage details included in Appendix E Table 2–1. Values exclude parking square footage. For the Year 2030 analysis, analysts assumed 25% buildout of Alternative 2.
Source: Draft Navy OTC Revitalization EIS DOPAA; Appendix E.

The Proposed Action Alternatives consist of the five land use alternatives and a No Action Alternative. The analysis created appropriate baseline conditions for each assessment for comparison and impact determination. Given the scale of each alternative, the development of a selected alternative will occur over several years into the future. The analysis assumes completion of construction of each alternative in the year 2050 for comparison with the 2050 No Action Alternative.

The analysis also includes an interim year – 2030 – for consistency with local requirements for evaluating significant near-term transportation impacts. Since a portion of Alternative 2 represents the most intense land use development and resulting trips added to the network without the addition of a transit center, a 25 percent buildout of Alternative 2 provides for an assessment of the worst-case near-term impact. The near-term analysis assumes that the Navy's public-private partnership would develop 25 percent of Alternative 2 by 2030. The analysis also establishes a year 2030 baseline for comparison with this 25 percent buildout alternative.

For each alternative, the analysis outlined in Appendix E evaluated peak hour conditions for intersections, street segments, mainline freeway segments, and one ramp meter location (on-ramp). The Navy's analysis used a comparison of the street segment ADT volumes to the City of San Diego's Roadway Classification, LOS, and ADT. The analysis assumes similar percentages for turning movements at intersections using ADT for 2050 to evaluate intersection LOS.

Section 3.2 and Appendix E of this EIS include baseline metrics and future year trip generation based on the alternatives and their corresponding land use activities and anticipated trip attractors and generators. Analysts used travel demand models to estimate trips for future years with outputs such as ADT values. The analysis also included LOS as well as performance measures that quantify the impacts from each alternative. Analysts applied customarily used traffic software tools using the data from predictive travel demand models to evaluate conditions on each transportation facility to quantify the impacts for comparison to the baseline conditions. The analysis also evaluated and recommended potential mitigation measures to address significantly impacted transportation facilities by alternative, in an effort to reduce potential impacts to a less than significant level as defined by local agency thresholds.

In a parallel evaluation, analysts consulted various community plan documents that outline separate transportation improvement projects for the facilities analyzed in this EIS. These plans outline transportation improvements in the ROI that are not part of this EIS. However, where community plans include specific projects to alleviate congestion and improve travel, the EIS summarizes those projects as potential mitigation measures (i.e., they would mitigate the impacts from the Proposed Action, if implemented). The EIS analysis also evaluates whether the community plan improvements would mitigate the impacts from the Proposed Action to less than significant. Such improvements are likely to be designed and constructed prior to or in parallel with the Proposed Action and would potentially help mitigate the impacts in future years.

To determine the significance of potential impacts to traffic for each alternative, the analysis included in Appendix E applied the criteria from the City of San Diego Significance Determination Thresholds. If the project would degrade conditions to an unacceptable LOS (E or F) or increase the applicable metrics (e.g., V/C ratio, speed, or delay) for those facilities already expected to operate at LOS E or F by a defined amount over the baseline, the impact would be considered significant. Table 3.2-6 outlines the criteria for significant traffic impacts for facilities already expected to operate at LOS E or F in the baseline.

Table 3.2-6 Significance Criteria and Allowable Increases in Key Metrics

LOS with Project	*Freeway (V/C Ratio)s*	*Freeways (speed [mph])*	*Roadway Segments (V/C Ration*	*Intersections (Delay [seconds])*	*Ramp Metering (Delay [minutes])*
E	0.010	1.0	0.02	2.0	2.0
F	0.005	0.5	0.01	1.0	1.0

Legend: LOS = level of service; mph = mile per hour; V/C = volume to capacity.

A significant impact would occur if the additional delay caused by the project would exceed 2 seconds for intersections operating at LOS E and 1 second for intersections operating at LOS F. For freeways, the significant impact threshold is a change in V/C ratio greater than 0.01 for facilities operating at LOS E and 0.005 for facilities operating at LOS F. For ramp meters, the guidance defines significant impacts as those where an action would increase delay at the ramp meter by 1 to 2 minutes over the baseline (or a total of 15 minutes of delay occurs during the peak hour).

The analysis documented in Appendix E included year 2050 conditions as the baseline for comparison with full buildout of each of the five Proposed Action Alternatives. SANDAG worked with local agencies and reviewed individual development projects and community/master plans to identify non-Navy projects that would contribute to demand for transportation facilities in 2050. SANDAG forecasted year 2050 traffic volumes using the data as inputs to the travel demand models. A complete discussion of the year 2050 conditions is included in Appendix E Section 8.

The Airport Connectivity Analysis (October 2019) prepared by SANDAG evaluates the development of an Automated Passenger Mover incorporated into the proposed Intermodal Transportation Center located near the San Diego International Airport. The Airport Authority, together with SANDAG, seeks to connect the San Diego International Airport to the region’s rail transit system. Two concepts were developed that would consolidate transit operations on OTC. The addition of the Automated Passenger Mover is included in the baseline against which Alternatives 4 and 5 are measured, since those alternatives include the transit center that would also serve the Automated Passenger Mover. More information regarding the Automated Passenger Mover is provided in Appendix E.

With the consolidation of transit operations on OTC, local roadways, particularly those serving the airport, would directly benefit from a reduction in vehicular traffic oriented to/from the airport. Grape and Hawthorn are two local constrained streets in the City of San Diego’s Little Italy neighborhood that experience heavy traffic volumes, mostly due to airport traffic. Shifting many of those trips onto the Automated Passenger Mover would help alleviate congestion in the immediate vicinity of the airport. For purposes of providing a conservative analysis, the analysis assumes no quantitative benefit to the ROI street system with the addition of the Automated Passenger Mover.

Appendix A of this EIS analyzes transportation in accordance with the CEQA. In 2013, the State of California passed Senate Bill 743 , which altered how transportation impacts from new development are measured under CEQA. Traditionally, transportation impacts have been assessed in terms of LOS, a measure of automobile delays or traffic along a roadway. Senate Bill 743 shifts from LOS to metrics aligned with state goals around greenhouse gas reduction, land use diversity, and development of multi-modal travel networks. The Governor's Office of Planning and Research has determined the best metric is Vehicle Miles Traveled, or VMT. VMT is calculated based on individual vehicle trips and their trip lengths. Redevelopment of OTC under Alternatives 4 and 5 (transit-oriented mixed-use) would result in a less than significant traffic impact under CEQA. Appendix A provides more detail on this analysis.

3.2.3.1 No Action Alternative

Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities. NAVWAR would continue to operate at OTC and no change would occur. The No Action Alternative would not meet the purpose and need for the Proposed Action as it would not provide modern facilities and would not enhance NAVWAR’s operational and sustainment effectiveness through redevelopment of OTC. In addition, the No Action Alternative would not enable NAVWAR to meet its operational and mission sustainment requirements. The No Action Alternative provides for an assessment of the potential impacts and future conditions without a Proposed Action.

Under the No Action Alternative, the following transportation facilities would experience LOS E or LOS F in 2050:

- Intersection #6 Rosecrans Street and Taylor Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #7. Rosecrans Street/Jefferson Street (LOS E/F – a.m. and p.m. peak)
- Intersection #8. Camino Del Rio W./Hancock Street (LOS F – p.m. peak)
- Intersection #11. Rosecrans Street/Sports Arena Boulevard (LOS E – p.m. peak)
- Intersection #12. Rosecrans Street/Midway Drive (LOS E – p.m. peak)
- Intersection #13. Rosecrans Street/Lytton Street (LOS E – a.m. and p.m. peak)
- Intersection #14. Lytton Street and Barnett Avenue/Truxtun Road (LOS E/F – a.m. and p.m. peak)
- Intersection #18. Pacific Highway/Kurtz Street (LOS F – a.m. and p.m. peak)
- Intersection #19. Pacific Highway/Sports Arena Boulevard (LOS F – p.m. peak)
- Intersection #20. Pacific Highway/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #22. Old Town Avenue/San Diego Avenue (LOS F/E – a.m. and p.m. peak)
- Intersection #23. Old Town Avenue/Moore Street (LOS F – a.m. and p.m. peak)
- Intersection #24. Old Town Avenue/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #25. Witherby Street/Hancock Street (LOS F – p.m. peak)
- Intersection #26. Witherby Street/Pacific Highway (LOS F – p.m. peak)
- Intersection #28. Hancock Street/Noell Street (LOS E/F – a.m. and p.m. peak)
- Intersection #30. W. Washington Street/Hancock Street (LOS E – p.m. peak)
- Intersection #31. Washington Street/Pacific Highway (N) (LOS F – p.m. peak)
- Intersection #33. Pacific Highway/Sassafras Street (LOS F – a.m. and p.m. peak)
- Intersection #34. Pacific Highway/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #35. Harbor Drive/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #36. Pacific Highway/Sea World Drive (LOS F – p.m. peak)
- Intersection #38. Sea World Drive/Interstate 5 Northbound Ramps (LOS F – p.m. peak)
- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)

- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: Sea World Dr to Taylor Street (LOS F)
- Street Segment #13. Pacific Highway: Kurtz St to Sports Arena Boulevard (LOS E)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)
- Street Segment #19. Morena Boulevard: Friars Road to Interstate 8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Solusa Street (LOS E)
- Street Segment #21. Kurtz Street: Rosecrans to Pacific Highway (LOS F)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS E)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS E)
- Street Segment #29. Lytton Street: Rosecrans Street to Street Charles Street (LOS E)
- Street Segment #30. Barnett Avenue: Street Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)
- Freeway Segment #2. Interstate 5: Interstate 8 to Old Town Avenue, Southbound (LOS E – a.m. peak) and Southbound (LOS E – p.m. peak)
- Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street, Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #9. Interstate 5: 1st Avenue to 6th Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #10. Interstate 5: 6th Avenue to State Route-163, Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #12. Interstate 8: Interstate 5 to Morena Boulevard, Westbound (LOS E – a.m. peak)
- Freeway Segment #13. Interstate 8: Morena Boulevard to Hotel Circle/Taylor Street, Westbound (LOS F – a.m. peak) and Eastbound (LOS E – p.m. peak)

- Freeway Segment #14. Interstate 8: Taylor Street to Hotel Circle, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Freeway Segment #15. Interstate 8: Hotel Circle to State Route 163, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Ramp Meter #1. Moore Street/Interstate 5 Northbound On-ramp – Delays of 23/35 minutes and queues of 130/187 vehicles during the a.m. and p.m. peak hours at the Moore Street/Northbound Interstate 5 On-ramp

Under the baseline condition that includes Automated Passenger Mover effects for analysis against Alternatives 4 and 5, similar conditions would occur on the transportation network in 2050 as compared with the No Action Alternative, with one additional intersection experiencing congested conditions. The ramp meter location also experiences unacceptable delay under baseline No Action but is shown here to highlight the delay and queue metrics under this condition.

The following additional facilities would experience LOS E or F under the baseline condition that includes the Automated Passenger Mover (due to added vehicle trips accessing the Automated Passenger Mover):

- Intersection #27. Witherby Street/Tripoli Street (LOS E – p.m. peak)
- Ramp Meter #1. Moore Street/Interstate 5 Northbound On-ramp – Delays of 166/220 minutes and queues of 166/220 vehicles during the a.m. and p.m. peak hours are calculated at the Moore Street/Northbound Interstate 5 On-ramp under Year 2050 for the baseline that includes Automated Passenger Mover

The transportation network would likely experience greater baseline demand from 2020 to 2050 with the No Action Alternative. However, under the No Action Alternative, NAVWAR operations would not add trips to the ROI based on development. Therefore, the No Action Alternative would not result in significant impacts to transportation above that experienced through ambient growth and non-Navy developments.

3.2.3.2 Alternative 1: NAVWAR-Only Redevelopment

This alternative focuses on revitalization of OTC to meet NAVWAR's facility requirements with Navy-funded capital improvements only. This alternative does not involve private development or consolidation of transit operations on OTC. The analysis focuses on the network within the ROI as shown in Figure 3.2-1. Table 3.2-7 outlines the trip generation for Alternative 1.

Table 3.2-7 Trip Generation for Alternative 1

Daily Trip Ends (ADT)	*AM Volume (In)*	*AM Volume (Out)*	*AM Volume (Total)*	*PM Volume (In)*	*PM Volume (Out)*	*PM Volume (Total)*
800	65	7	72	8	72	80

Legend: ADT = average daily traffic.

Under Alternative 1, the following transportation facilities would experience significant impacts in 2050:

- Intersection #6. Rosecrans Street and Taylor Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #18. Pacific Highway/Kurtz Street (LOS F – a.m. and p.m. peak)
- Intersection #19. Pacific Highway/Sports Arena Boulevard (LOS F – p.m. peak)
- Intersection #20. Pacific Highway/Enterprise Street (LOS F – a.m. and p.m. peak)

- Intersection #23. Old Town Avenue/Moore Street (LOS F – a.m. and p.m. peak)
- Intersection #24. Old Town Avenue/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #25. Witherby Street/Hancock Street (LOS F – p.m. peak)
- Intersection #26. Witherby Street/Pacific Highway (LOS F – p.m. peak)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)

Alternative 1 would result in significant impacts to eight intersections and one street segment over the baseline conditions. This is due to a slight increase in NAVWAR square footage over the existing conditions included under the No Action Alternative. Section 3.2.3.9 outlines the potential mitigation measures for each significant impact location. The descriptions include whether the mitigation measures reduce the impacts to a less than significant level.

3.2.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density

This alternative includes potential public-private partnership and commercial development of OTC property. Alternative 2 represents a higher intensity of new public-private development on OTC and would redevelop the site to contain a NAVWAR footprint without warehouse and open storage. Alternative 2 would include a combination of mixed-use residential, office, hotel, and retail space. The analysis focuses on the network within the ROI as shown in Figure 3.2-1. Table 3.2-8 outlines the trip generation for Alternative 2.

Table 3.2-8 Trip Generation for Alternative 2

Daily Trip Ends (ADT)	*AM Volume (In)*	*AM Volume (Out)*	*AM Volume (Total)*	*PM Volume (In)*	*PM Volume (Out)*	*PM Volume (Total)*
51,964	1,583	2,472	4,055	2,909	2,150	5,059

Legend: ADT = average daily traffic.

Under Alternative 2, the following transportation facilities would experience significant impacts in 2050:

- Intersection #2. Taylor Street/Interstate 8 Eastbound Ramps (LOS E – p.m. peak)
- Intersection #6. Rosecrans Street and Taylor Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #7. Rosecrans Street/Jefferson Street (LOS E/F – a.m. and p.m. peak)
- Intersection #8. Camino Del Rio W./Hancock Street (LOS E/F – a.m. and p.m. peak)
- Intersection #11. Rosecrans Street/Sports Arena Boulevard (LOS E/F – a.m. and p.m. peak)
- Intersection #12. Rosecrans Street/Midway Drive (LOS E – p.m. peak)
- Intersection #13. Rosecrans Street/Lytton Street (LOS F/E – a.m. and p.m. peak)
- Intersection #14. Lytton Street and Barnett Avenue/Truxtun Road (LOS E/F – a.m. and p.m. peak)
- Intersection #15. Midway Drive/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #16. Midway Drive/Barnett Avenue (LOS F – p.m. peak)
- Intersection #18. Pacific Highway/Kurtz Street (LOS F – a.m. and p.m. peak)
- Intersection #19. Pacific Highway/Sports Arena Boulevard (LOS F – a.m. and p.m. peak)
- Intersection #20. Pacific Highway/Enterprise Street (LOS F – a.m. and p.m. peak)

- Intersection #22. Old Town Avenue/San Diego Avenue (LOS F/E – a.m. and p.m. peak)
- Intersection #23. Old Town Avenue/Moore Street (LOS F – a.m. and p.m. peak)
- Intersection #24. Old Town Avenue/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #25. Witherby Street/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #26. Witherby Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #27. Witherby Street/Tripoli Avenue (LOS F – a.m. and p.m. peak)
- Intersection #28. Hancock Street/Noell Street (LOS E/F – a.m. and p.m. peak)
- Intersection #30. W. Washington Street/Hancock Street (LOS E – p.m. peak)
- Intersection #33. Pacific Highway/Sassafras Street (LOS F – a.m. and p.m. peak)
- Intersection #34. Pacific Highway/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #35. Harbor Drive/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #36. Pacific Highway/Sea World Drive (LOS F – a.m. and p.m. peak)
- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: Sea World Drive to Taylor Street (LOS F)
- Street Segment #13. Pacific Highway: Kurtz St to Sports Arena Boulevard (LOS F)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)
- Street Segment #19. Morena Boulevard: Friars Road to Interstate 8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS F)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS E)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)
- Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #33. Hancock Street: Witherby Street to Noell Street (LOS E)
- Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)

- Freeway Segment #2. Interstate 5: Interstate 8 to Old Town Avenue, Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #9. Interstate 5: 1st Avenue to 6th Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #10. Interstate 5: 6th Avenue to State Route 163, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS E/F – p.m. peak)
- Freeway Segment #12. Interstate 8: Interstate 5 to Morena Boulevard, Westbound (LOS E – a.m. peak)
- Freeway Segment #13. Interstate 8: Morena Boulevard to Hotel Circle/Taylor Street, Westbound (LOS F – a.m. peak) and Eastbound (LOS E – p.m. peak)
- Freeway Segment #14. Interstate 8: Taylor Street to Hotel Circle, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Freeway Segment #15. Interstate 8: Hotel Circle to State Route 163, Eastbound/Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Ramp Meter #1. Moore Street/Interstate 5 Northbound On-ramp – Delays of 70/78 minutes and queues of 390/413 vehicles during the a.m. and p.m. peak hours

Alternative 2 would result in significant impacts to 25 intersections, 25 street segments, 10 freeway segments, and 1 ramp meter location over the baseline conditions. Section 3.2.3.9 outlines the potential mitigation measures for each significant impact location. The descriptions include whether the mitigation measures reduce the impacts to a less than significant level.

3.2.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Alternative 3 represents a lower intensity of new public-private development on OTC, with redevelopment to contain a NAVWAR footprint without warehouse and open storage space. Alternative 3 would include a combination mixed-use residential, office, hotel, and retail space at a lower density than Alternative 2. The analysis focuses on the network within the ROI as shown in Figure 3.2-1. Table 3.2-9 outlines the trip generation for Alternative 3.

Table 3.2-9 Trip Generation for Alternative 3

Daily Trip Ends (ADT)	*AM Volume (In)*	*AM Volume (Out)*	*AM Volume (Total)*	*PM Volume (In)*	*PM Volume (Out)*	*PM Volume (Total)*
34,592	1,044	1,648	2,692	1,959	1,429	3,388

Legend: ADT = average daily traffic.

Under Alternative 3, the following transportation facilities would experience significant impacts in 2050:

- Intersection #6 Rosecrans Street and Taylor Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #7. Rosecrans Street/Jefferson Street (LOS E/F – a.m. and p.m. peak)
- Intersection #8. Camino Del Rio W./Hancock Street (LOS E/F – a.m. and p.m. peak)
- Intersection #11. Rosecrans Street/Sports Arena Boulevard (LOS F – p.m. peak)
- Intersection #12. Rosecrans Street/Midway Drive (LOS E – p.m. peak)
- Intersection #13. Rosecrans Street/Lytton Street (LOS E – a.m. and p.m. peak)
- Intersection #14. Lytton Street and Barnett Avenue/Truxtun Road (LOS E/F – a.m. and p.m. peak)
- Intersection #15. Midway Drive/Enterprise Street (LOS E/F – a.m. and p.m. peak)
- Intersection #18. Pacific Highway/Kurtz Street (LOS F – a.m. and p.m. peak)
- Intersection #19. Pacific Highway/Sports Arena Boulevard (LOS E/F – a.m. and p.m. peak)
- Intersection #20. Pacific Highway/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #22. Old Town Avenue/San Diego Avenue (LOS F/E – a.m. and p.m. peak)
- Intersection #23. Old Town Avenue/Moore Street (LOS F – a.m. and p.m. peak)
- Intersection #24. Old Town Avenue/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #25. Witherby Street/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #26. Witherby Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #27. Witherby Street/Tripoli Avenue (LOS F – p.m. peak)
- Intersection #28. Hancock Street/Noell Street (LOS E/F – a.m. and p.m. peak)
- Intersection #30. W. Washington Street/Hancock Street (LOS E – p.m. peak)
- Intersection #33. Pacific Highway/Sassafras Street (LOS F – a.m. and p.m. peak)
- Intersection #34. Pacific Highway/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #35. Harbor Drive/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #36. Pacific Highway/Sea World Drive (LOS E/F – a.m. and p.m. peak)
- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: Sea World Drive to Taylor Street (LOS F)
- Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard (LOS F)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)
- Street Segment #19. Morena Boulevard: Friars Road to Interstate 8 (LOS F)

- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS F)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS E)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)
- Street Segment #30. Barnett Avenue: Street Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #33. Hancock Street: Witherby Street Noell Street (LOS E)
- Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)
- Freeway Segment #2. Interstate 5: Interstate 8 to Old Town Avenue, Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS E/F – p.m. peak)
- Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #9. Interstate 5: 1st Avenue to 6th Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #10. Interstate 5: 6th Avenue to State Route 163, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS E/F – p.m. peak)
- Freeway Segment #12. Interstate 8: Interstate 5 to Morena Boulevard, Westbound (LOS E – a.m. peak)
- Freeway Segment #13 Interstate 8: Morena Boulevard to Hotel Circle/Taylor Street, Westbound (LOS F – a.m. peak) and Eastbound (LOS E – p.m. peak)
- Freeway Segment #14. Interstate 8: Taylor Street to Hotel Circle, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Freeway Segment #15. Interstate 8: Hotel Circle to State Route 163, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Ramp Meter #1. Moore Street/Interstate 5 NB On-ramp – Delays of 54/64 minutes and queues of 304/337 vehicles during the a.m. and p.m. peak hours

Alternative 3 would result in significant impacts to 23 intersections, 25 street segments, 10 freeway segments, and 1 ramp meter location over the baseline conditions. Section 3.2.3.9 outlines the potential mitigation measures for each significant impact location. The descriptions include whether the mitigation measures reduce the impacts to a less than significant level.

3.2.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

Alternative 4 represents a higher intensity of new public-private development on OTC, including consolidation of transit operations. Alternative 4 would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage and with a higher density of mixed use residential, office, hotel, and retail space. The analysis compares this alternative with the baseline that considers the addition of other projects from regional transportation plans and programs (automated people mover, light rail lines, and other mass transit projects). Table 3.2-10 outlines the trip generation for Alternative 4.

Table 3.2-10 Trip Generation for Alternative 4

Daily Trip Ends (ADT)	*AM Volume (In)*	*AM Volume (Out)*	*AM Volume (Total)*	*PM Volume (In)*	*PM Volume (Out)*	*PM Volume (Total)*
70,022	1,904	3,253	5,157	3,786	2,690	6,476

Legend: ADT = average daily traffic.

Under Alternative 4, the following transportation facilities would experience significant impacts in 2050:

- Intersection #2 Taylor Street/Interstate 8 Eastbound Ramps (LOS E – p.m. peak hour)
- Intersection #6. Rosecrans Street and Taylor Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #7. Rosecrans Street/Jefferson Street (LOS E/F – a.m. and p.m. peak)
- Intersection #8. Camino Del Rio W./Hancock Street (LOS E/F – a.m. and p.m. peak)
- Intersection #11. Rosecrans Street/Sports Arena Boulevard (LOS E/F – a.m. and p.m. peak)
- Intersection #12. Rosecrans Street/Midway Drive (LOS F – p.m. peak)
- Intersection #13. Rosecrans Street/Lytton Street (LOS F – a.m. and p.m. peak)
- Intersection #14. Lytton Street and Barnett Avenue/Truxtun Road (LOS E/F – a.m. and p.m. peak)
- Intersection #15. Midway Drive/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #16. Midway Drive/Barnett Avenue (LOS F – p.m. peak)
- Intersection #18. Pacific Highway/Kurtz Street (LOS F – a.m. and p.m. peak)
- Intersection #19. Pacific Highway/Sports Arena Boulevard (LOS F – a.m. and p.m. peak)
- Intersection #20. Pacific Highway/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #22. Old Town Avenue/San Diego Avenue (LOS F – a.m. and p.m. peak)
- Intersection #23. Old Town Avenue/Moore Street (LOS F – a.m. and p.m. peak)
- Intersection #24. Old Town Avenue/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #25. Witherby Street/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #26. Witherby Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #27. Witherby Street/Tripoli Avenue (LOS F – a.m. and p.m. peak)
- Intersection #28. Hancock Street/Noell Street (LOS F – a.m. and p.m. peak)
- Intersection #30. W. Washington Street/Hancock Street (LOS E – p.m. peak)
- Intersection #31. W. Washington Street/Pacific Highway (N) (LOS F – p.m. peak)
- Intersection #33. Pacific Highway/Sassafras Street (LOS F – a.m. and p.m. peak)

- Intersection #34. Pacific Highway/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #35. Harbor Drive/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #36. Pacific Highway/Sea World Drive (LOS F – a.m. and p.m. peak)
- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: Sea World Drive to Taylor Street (LOS F)
- Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard (LOS F)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)
- Street Segment #19. Morena Boulevard: Friars Road to Interstate 8 (LOS F)
- Street Segment #20. Linda Vista Road; Morena Boulevard to Colusa Street (LOS F)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS F)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)
- Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #33. Hancock Street: Witherby Street Noell Street (LOS E)
- Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)
- Freeway Segment #2. Interstate 5: Interstate 8 to Old Town Avenue, Northbound/Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #9. Interstate 5: 1st Avenue to 6th Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)

- Freeway Segment #10. Interstate 5: 6th Avenue to State Route 163 Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #12. Interstate 8: Interstate 5 to Morena Boulevard, Westbound (LOS E – a.m. peak)
- Freeway Segment #13. Interstate 8: Morena Boulevard to Hotel Circle/Taylor Street, Westbound (LOS F – a.m. peak) and Eastbound (LOS E – p.m. peak)
- Freeway Segment #14. Interstate 8: Taylor Street to Hotel Circle, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Freeway Segment #15. Interstate 8: Hotel Circle to State Route 163, Eastbound/Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Ramp Meter #1. Moore Street/Interstate 5 Northbound On-ramp – Delays of 91/95 minutes and queues of 509/504 vehicles during the a.m. and p.m. peak hours

Alternative 4 would result in significant impacts to 26 intersections, 25 street segments, 10 freeway segments, and 1 ramp meter location over the baseline conditions. Section 3.2.3.9 outlines the potential mitigation measures for each significant impact location. The descriptions include whether the mitigation measures reduce the impacts to a less than significant level.

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

Alternative 5 represents a lower intensity of new public-private development on OTC, including consolidation of transit operations. This alternative would redevelop OTC to contain a NAVWAR footprint without warehouse and open storage. It would include a combination of mixed-use residential, office, hotel, and retail space at a lower density than Alternative 4. The analysis for this alternative includes a comparison with a baseline that includes projects associated with regional transportation plans, programs, and projects (automated people mover, light rail lines, and other mass transit projects) for evaluation of impacts. Table 3.2-11 outlines the trip generation for Alternative 5.

Table 3.2-11 Trip Generation for Alternative 5

Daily Trip Ends (ADT)	*AM Volume (In)*	*AM Volume (Out)*	*AM Volume (Total)*	*PM Volume (In)*	*PM Volume (Out)*	*PM Volume (Total)*
55,309	1,406	2,610	4,016	3,039	2,031	5,070

Legend: ADT = average daily traffic.

Under Alternative 5, the following transportation facilities would experience significant impacts in 2050:

- Intersection #2. Taylor Street/Interstate 8 Eastbound Ramps (LOS E – p.m. peak)
- Intersection #6. Rosecrans Street and Taylor Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #7. Rosecrans Street/Jefferson Street (LOS E/F – a.m. and p.m. peak)
- Intersection #8. Camino Del Rio W./Hancock Street (LOS E/F – a.m. and p.m. peak)
- Intersection #11. Rosecrans Street/Sports Arena Boulevard (LOS E/F – a.m. and p.m. peak)
- Intersection #12. Rosecrans Street/Midway Drive (LOS E – p.m. peak)
- Intersection #13. Rosecrans Street/Lytton Street (LOS F – a.m. and p.m. peak)

- Intersection #14. Lytton Street and Barnett Avenue/Truxtun Road (LOS E/F – a.m. and p.m. peak)
- Intersection #15. Midway Drive/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #16. Midway Drive/Barnett Avenue (LOS E – p.m. peak)
- Intersection #18. Pacific Highway/Kurtz Street (LOS F – a.m. and p.m. peak)
- Intersection #19. Pacific Highway/Sports Arena Boulevard (LOS F – a.m. and p.m. peak)
- Intersection #20. Pacific Highway/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #22. Old Town Avenue/San Diego Avenue (LOS F/E – a.m. and p.m. peak)
- Intersection #23. Old Town Avenue/Moore Street (LOS F – a.m. and p.m. peak)
- Intersection #24. Old Town Avenue/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #25. Witherby Street/Hancock Street (LOS F – a.m. and p.m. peak)
- Intersection #26. Witherby Street/Pacific Highway (LOS F – a.m. and p.m. peak)
- Intersection #27. Witherby Street/Tripoli Avenue (LOS F – a.m. and p.m. peak)
- Intersection #28. Hancock Street/Noell Street (LOS E/F – a.m. and p.m. peak)
- Intersection #30. W. Washington Street/Hancock Street (LOS E – p.m. peak)
- Intersection #31. W. Washington Street/Pacific Highway (N) (LOS F – p.m. peak)
- Intersection #33. Pacific Highway/Sassafras Street (LOS F – a.m. and p.m. peak)
- Intersection #34. Pacific Highway/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #35. Harbor Drive/Laurel Street (LOS F – a.m. and p.m. peak)
- Intersection #36. Pacific Highway/Sea World Drive (LOS F – a.m. and p.m. peak)
- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: Sea World Drive to Taylor Street (LOS F)
- Street Segment #13. Pacific Highway: Kurtz St to Sports Arena Boulevard (LOS F)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)
- Street Segment #19. Morena Boulevard: Friars Road to Interstate 8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS F)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS E)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)

- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)
- Street Segment #33. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #33. Hancock Street: Witherby Street Noell Street (LOS E)
- Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)
- Freeway Segment #2. Interstate 5: Interstate 8 to Old Town Avenue, Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street, Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #13. Interstate 5: 1st Avenue to 6th Avenue, Northbound/Southbound (LOS F – a.m. peak) and Northbound/Southbound (LOS F – p.m. peak)
- Freeway Segment #14. Interstate 5: 6th Avenue to State Route 163 Northbound/Southbound (LOS E/F – a.m. peak) and Northbound/Southbound (LOS E/F – p.m. peak)
- Freeway Segment #12. Interstate 8: Interstate 5 to Morena Boulevard, Westbound (LOS E – a.m. peak)
- Freeway Segment #9. Interstate 8: Morena Boulevard to Hotel Circle/Taylor Street, Westbound (LOS F – a.m. peak) and Eastbound (LOS E – p.m. peak)
- Freeway Segment #10. Interstate 8: Taylor Street to Hotel Circle, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Freeway Segment #15. Interstate 8: Hotel Circle to State Route 163, Eastbound/Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Ramp Meter #1. Moore Street/Interstate 5 Northbound On-ramp – Delays of 79/82 minutes and queues of 442/435 vehicles during the a.m. and p.m. peak hours

Alternative 5 would result in significant impacts to 26 intersections, 25 street segments, 10 freeway segments, and 1 ramp meter location over the baseline conditions. Section 3.2.3.9 outlines the potential mitigation measures for each significant impact location. The descriptions include whether the mitigation measures reduce the impacts to a less than significant level.

Under Alternatives 4 and 5, increased transit center use could reduce the number of vehicle trips under future conditions. In addition, consolidation of transit operations on OTC would also create trips as users drive to the transit center to access mass transit. Adequate parking at this location would also be planned into the final design of a transit center.

3.2.3.7 Near-Term Year 2030: Alternative 2 (Public-Private Development–NAVWAR and Higher Density Mixed Use) 25 Percent Operations

To evaluate near-term impacts to the local network without the community plan projects as mitigation, the Navy evaluated one scenario in 2030 against an established 2030 baseline condition. A portion of Alternative 2 represents the most intense land use development and resulting trip generation (without consolidation of transit operations on OTC) that could partially develop within a 10-year timeframe. Within the 10-year timeframe, the Navy assumed approximately 25 percent of Alternative 2 would develop by year 2030. Analysts added the traffic generated under this scenario to the year 2030 baseline traffic volumes to arrive at near-term year 2030 with Alternative 2 (25 percent) traffic volumes. The Navy evaluated added trips on the network based on 25 percent of Alternative 2 developed by the year 2030 to assist decision makers with a full evaluation of the potential impacts of the Proposed Action Alternatives. The difference in inputs for this analysis is the 25 percent build assumption as well as the exclusion of the future non-Navy projects outlined for full buildout by the year 2050. Table 3.2-12 outlines the trip generation for the near-term 2030 Alternative 2 (25 percent).

Table 3.2-12 Trip Generation for Alternative 2 with 25 Percent Buildout by 2030

Daily Trip Ends (ADT)	*AM Volume (In)*	*AM Volume (Out)*	*AM Volume (Total)*	*PM Volume (In)*	*PM Volume (Out)*	*PM Volume (Total)*
11,951	338	612	950	732	461	1,193

Legend: ADT = average daily traffic.

Under a 25 percent buildout of Alternative 2 in 2030, the following transportation facilities would experience significant impacts:

- Intersection #6. Rosecrans Street and Taylor Street/Pacific Highway (LOS E/F – a.m. and p.m. peak)
- Intersection #7. Rosecrans Street/Jefferson Street (LOS F – p.m. peak)
- Intersection #13. Rosecrans Street/Lytton Street (LOS E – p.m. peak)
- Intersection #14. Lytton Street and Barnett Avenue/Truxtun Road (LOS F – p.m. peak)
- Intersection #18. Pacific Highway/Kurtz Street (LOS E/F – a.m. and p.m. peak)
- Intersection #19. Pacific Highway/Sports Arena Boulevard (LOS F – p.m. peak)
- Intersection #20. Pacific Highway/Enterprise Street (LOS F – a.m. and p.m. peak)
- Intersection #23. Old Town Avenue/Moore Street (LOS F – a.m. and p.m. peak)
- Intersection #24. Old Town Avenue/Hancock Street (LOS F/E – a.m. and p.m. peak)
- Intersection #25. Witherby Street/Hancock Street (LOS E/F – a.m. and p.m. peak)
- Intersection #26. Witherby Street/Pacific Highway (LOS F – p.m. peak)
- Intersection #33. Pacific Highway/Sassafras Street (LOS F/E – a.m. and p.m. peak)
- Intersection #36. Pacific Highway/Sea World Drive (LOS E – p.m. peak)
- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard Kurtz Street (LOS E)

- Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 East Ramp (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS E)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS E)
- Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street, Southbound (LOS E – a.m. peak) and Southbound (LOS E – p.m. peak)
- Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street, Southbound (LOS E – a.m. peak) and Southbound (LOS E – p.m. peak)
- Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue, Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #9. Interstate 5: 1st Avenue to 6th Avenue, Southbound (LOS E – a.m. peak) and Northbound/Southbound (LOS E – p.m. peak)
- Freeway Segment #10. Interstate 5: 6th Avenue to State Route 163, Southbound (LOS E – a.m. peak) and Southbound (LOS E – p.m. peak)
- Freeway Segment #14. Interstate 8: Taylor Street to Hotel Circle, Eastbound (LOS F – p.m. peak)
- Freeway Segment #15. Interstate 8: Hotel Circle to State Route 163, Westbound (LOS E – a.m. peak) and Eastbound (LOS F – p.m. peak)
- Ramp Meter #1. Moore Street/Interstate 5 Northbound On-ramp – Delays of 10/17 minutes and queues of 55/90 vehicles during the a.m. and p.m. peak hours

For year 2030, the 25 percent buildout for Alternative 2 would result in significant impacts to 13 intersections, 12 street segments, seven freeway segments, and one ramp meter location over the 2030 baseline conditions. Section 3.2.3.9 outlines the potential mitigation measures for each significant impact location. The descriptions include whether the mitigation measures would reduce the impacts to a less than significant level.

Construction operations for any alternative could result in significant impacts to the transportation network during construction. Future project designs should include Transportation Management Plans where required for significant projects, and Temporary Traffic Control Plans to manage traffic flow during construction. The plans should be prepared in accordance with all applicable encroachment permits and plans, ordinances, and policies.

3.2.3.8 Coastal Access

Appendix E shows that the project adds less than 50 peak hour trips to coastal access roadways such as Harbor Drive in the Embarcadero area, Rosecrans Street in the Liberty Station and Point Loma areas, Sunset Cliffs Boulevard in the Ocean Beach area, and Shelter Island Drive. The City of San Diego utilizes a traffic analysis requirement threshold for projects that generate more than 50 peak hour trips on the network. This project would add an insignificant amount of traffic to the coastal access roadways listed above, and the added traffic would be less than the day-to-day fluctuation in traffic based on the City of San Diego guidelines. It should also be noted that the Navy's analysis considered peak weekday commuter periods. In addition, due to the nature of the project and the corresponding heavy weekday trip generators such as office and residential uses, the amount of traffic the project would add to the street system would be much less on weekends – a timeframe in which coastal access by residents and visitors is high.

3.2.3.9 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No monitoring measures are warranted for transportation based on the analysis presented in Section 3.2.3.

Proposed Management Practices

This EIS recommends implementation of Transportation Demand Management (TDM) and Transportation Systems Management (TSM) strategies based on the analysis presented in Section 3.2.3.

- TRANS MGMT-1. *Implement TDM program to reduce single-occupancy vehicle trips induced by the Proposed Action.* TDM involves a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length to help achieve more efficient and sustainable transportation facilities. TDM can help reduce the single-occupancy vehicle trips by providing users with incentives to seek alternative forms of transportation along with information about programs and services. TDM can be beneficial to all users, including residents, employees, guests, property owners/managers, and the community as a whole. Appendix E, Section 27 provides a full list of TDM strategies for consideration.
- TRANS MGMT-2. *Use TSM technology to improve traffic operations along various corridors.* TSM involves the use of technology to manage and more efficiently operate the transportation infrastructure. For example, the City of San Diego has a plan for an Intelligent Transportation Systems program on key transportation corridors within the City. Intelligent Transportation Systems enables the operation of intersections as part of a coordinated system, allows for remote intersection monitoring from the City's Traffic Management Center, and provides flexibility to remotely change signal timing in response to changes in traffic flow based on fluctuating demand or incident impacts (potentially improving LOS). Intersection improvements designed to address the significant impacts of the Proposed Action Alternatives consist of the design, the construction, and integration of Intelligent Transportation Systems improvements, which include, but are not limited to: vehicle detection, computer hardware and networking, fiber-optic communication system upgrades, closed circuit TV cameras, changeable message signs, blank-out signs, equipment and networking management, traffic signal modifications, Traffic Management Center and Decision Support System integration, software licensing, high resolution data, connected vehicle technology, upgrading outdated software and equipment, adaptive traffic signal controllers and cabinets, lane control management, and other improvements to the Intelligent Transportation Systems network.
- TRANS MGMT-3. *Establish a process for future project-specific level clearances.* The EIS recommends establishment of the following process for future project-specific level clearances. Prior to approval of any discretionary project that is forecast to generate more than 100 peak hour trips, the project developers shall prepare a traffic improvement analysis for any facilities under the jurisdiction of the City of San Diego at which the project is anticipated to contribute more than 50 peak hour trips and where a significant unavoidable impact was calculated. Agencies should consider Intelligent Transportation Systems improvements if transportation analysis demonstrates such improvements can achieve acceptable vehicle LOS.

- TRANS MGMT-4. *Coordinate with appropriate agencies on potential transit network efficiencies*. The EIS recommends further evaluation on the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Action Alternatives should provide transit signal priority improvements. Transit signal priority technologies would be implemented or developed by appropriate local transportation agencies. Cost share would be determined by any future development agreements and associated developer impact fees prior to any lease or land transfer agreement.
  - Midway Drive, between East Drive to Rosecrans Street
  - Rosecrans Street, between Dewey Road and Pacific Highway
  - Pacific Highway, between Friars Road and Washington Street
  - Taylor Street, between Presidio Drive and Interstate 8 Eastbound Ramps
- TRANS MGMT-5. Coordinate with appropriate agencies to prepare a Transit Mobility Plan for the Proposed Action Alternatives that include a transit center. The plan would propose to consolidate transition operations on OTC. The Transit Mobility Plan would be implemented or developed by appropriate local transportation agencies. Cost share would be determined by any future development agreements and associated developer impact fees prior to any lease or land transfer agreement.

Potential Mitigation

Measures to Reduce Impacts at Intersection, Street Segment, Freeway Segment, and Freeway On-ramp Meters

For transportation facilities where widening and expansion is possible due to available, less constrained right-of-way, the EIS identifies potential physical mitigation measures. Several potential mitigation measures would lessen the impacts to transportation facilities, with some facilities anticipated to fall below the significance threshold with implementation of the mitigation measures. Local community plans outline some of the potential mitigation measures such as improvements to existing geometry that would mitigate impacts to a less than significant level. These community plan improvements are likely to be constructed at a point in time that coincides with construction of any Proposed Action. However, these local community plans do not identify funding sources or timelines for the improvements.

For transportation facilities where physical expansion is not possible, such as for locations with constrained and confined right-of-way, agencies have other strategies for mitigation. Implementation of Intelligent Transportation Systems strategies will increase mobility at intersections for all modes of travel including vehicle, bicycle, pedestrian, transit, and emergency vehicle trips. The EIS proposes some potential mitigation strategies as partial mitigation for significant and unavoidable impacts at certain locations. Costs and funding for these mitigation measures would be determined at an appropriate time in the future.

The potential mitigation measures that are not currently part of a community plan include reconstruction of the Interstate 5 interchange at Old Town Avenue and geometric improvements for 3 intersections from the group below (intersections 14, 28, and 36).

For Alternatives 2-5, the Navy intends to work with stakeholders to identify a process for the implementation of NEPA mitigation in connection with the eventual transfer of OTC property interests. This process could take the form of a development agreement with SANDAG or the City of San Diego, provisions included directly in the lease or other transfer agreement requiring the transferee to accomplish mitigation, or another appropriate process. When site development details are known, the selected developer(s), and in the case of Alternatives 4 or 5 the transit agencies, would work directly with the City of San Diego or other appropriate local agencies on the implementation of, or fair share contribution to, mitigation measures related to traffic impacts. The agency or agencies responsible for mitigation would follow all applicable laws and regulations.

The following potential mitigation measures also identify if the measures would lessen the impacts below the threshold of significance.

- TRANS MIT-1. *Intersection #2. Taylor Street/Interstate 8 EB Ramps* – Per the Mission Valley Community Plan, the entirety of Hotel Circle would be transformed from a bi-directional collector to a one-way couplet running in the clockwise direction. As part of this network change, the Taylor Street/Interstate 8 Eastbound Ramps interchange would be eliminated and replaced by a new signalized interchange at Interstate 8 with the future connection of Via Las Cumbres. Given the unknown timing for implementation and the lack of an identified funding source in the Mission Valley Community Plan, the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-2. *Intersection #6. Rosecrans Street/Taylor Street/Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of the Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-3. *Intersection #7. Rosecrans Street/Jefferson Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located within close proximity to the Rosecrans Street/Taylor Street/Pacific Highway signalized intersection (350 feet) which would be less than ideal for installing a signal and it would not be expected that the intersection would meet signal warrants given the very low minor street volumes on Jefferson Street. The provision of an additional signal on this segment of Rosecrans Street where heavy through traffic exists would not be beneficial to the major street traffic flow. Based on these findings, the EIS does not recommend any

improvements and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.

- TRANS MIT-4. *Intersection #8. Camino Del Rio West/Hancock Street* – The intersection is built out and has no additional right-of-way. Additional through lanes on Camino Del Rio West are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-5. *Intersection #11. Rosecrans Street/Sports Arena Boulevard* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane. The planned improvements allow southbound movements to continue on Sports Arena Boulevard through the intersection. Notably, vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino Del Rio West. With the improvements proposed at this intersection, the Community Plan reports LOS D results. The additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, the EIS recommends implementation of the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-6. *Intersection #12. Rosecrans Street/Midway Drive* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes an exclusive southbound right-turn lane with an overlap phase, a westbound right-turn overlap phase, and an eastbound right-turn overlap phase. With the improvements proposed at this intersection, the Community Plan reports LOS E results, concluding the impact remains significant and unavoidable. With the additional traffic added by the Proposed Action Alternatives, the intersection continues to operate at LOS E. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, the EIS recommends implementation of the Community Plan improvements,

where feasible. Given that the impact at this location remains significant and unavoidable, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.

- TRANS MIT-7. *Intersection #13. Rosecrans Street/Lytton Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes right-turn overlap phasing in the northbound, southbound, and westbound directions. A second eastbound left-turn lane is proposed. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-8. *Intersection #14. Lytton Street/Barnett Avenue/Truxtun Road* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Constructing an eastbound dedicated right-turn lane within the existing curb-to-curb width would mitigate the impact to below a level of significance.
- TRANS MIT-9. *Intersection #15. Midway Drive/Enterprise Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/Barnett Avenue intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action Alternatives to the westbound right-turning movement is substantial. Those additional trips result in a significant delay for southbound right-turns from Enterprise Street onto Midway Drive. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/Barnett Avenue intersection, reconstructing this intersection in combination with the Midway/Barnett Avenue intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-10. *Intersection #16. Midway Drive/Barnett Avenue* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/Enterprise Street intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action Alternatives to the southbound right-turning and eastbound left-turning movements is substantial. Those additional trips result in a significant delay at this intersection. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/Enterprise Street, reconstructing this intersection in combination with the Midway Drive/Enterprise Street intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.

- TRANS MIT-11. *Intersection #18. Pacific Highway/Kurtz Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. With the improvements proposed at this intersection, the Community Plan reports high LOS D results. However, the additional traffic added by the Proposed Action Alternatives would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action Alternatives implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-12. *Intersection #19. Pacific Highway/Sports Arena Boulevard* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action Alternatives, acceptable LOS operations would continue to occur. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-13. *Intersection #20. Pacific Highway/Enterprise Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for OTC. With future development of the Proposed Action, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes are also needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures. These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-14. *Intersection #22. Old Town Avenue/San Diego Avenue* – There are no planned improvements in the Old Town Community Plan at this intersection. The intersection is built out with regard to available right-of-way. Additional lanes on intersection approaches are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Therefore, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.

- TRANS MIT-15. *Intersection #23. Old Town Avenue/Moore Street* – Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing changes from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Caltrans and SANDAG, as part of the Airport Connectivity Analysis, have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/Moore Street intersection that effectively operates as the Interstate 5 North interchange with Old Town Avenue. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-16. *Intersection #24. Hancock Street/Old Town Avenue/Interstate 5 SB Off-Ramps* – There are no planned improvements for this intersection in the Old Town Community Plan. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/Hancock Street intersection that effectively operates as the Interstate 5 southbound off-ramp with Old Town Avenue and Hancock Street. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-17**.** *Intersection #25. Witherby Street/Hancock Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. With the improvements proposed at this intersection, the Community Plan reports low LOS D results. However, the additional traffic added by the Proposed Action Alternatives would degrade intersection operations to significant levels. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the

interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

- TRANS MIT-18. *Intersection #26. Witherby Street/Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-19. *Intersection #27. Witherby Street/Tripoli Avenue* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-20. *Intersection #28. Hancock Street/Noell Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installing a traffic signal at this intersection would mitigate the impact to below a level of significance.
- TRANS MIT-21. *Intersection #30. Washington Street/Hancock Street* – Per the Midway-Pacific Highway Community Plan, improvements are recommended at this intersection. The Community Plan recommends restriping the southbound approach to provide a second right-turn lane. However, the Community Plan states that the provision of the additional turn lane would eliminate heavily utilized street parking and therefore concludes impacts to this

intersection would remain significant and unavoidable. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

- TRANS MIT-22. *Intersection #31. Washington Street/Pacific Highway* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends participation by the airport in regional efforts to develop a long-range transportation solution for accessing the airport, including: 1) participate in regional planning efforts led by SANDAG to determine transit connections between regional transit and the airport terminals, freeway connections along the Laurel Street corridor, Intelligent Transportation Systems, and mobility hub improvements/strategies; and 2) participate in the implementation of improvements and strategies identified in the Airport Connectivity Analysis. However, the improvements were considered infeasible because parts of the mitigation measures are within the control of other agencies or jurisdictions. Therefore, the impact would remain significant and unavoidable. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-23. *Intersection #33. Pacific Highway/Sassafras Street* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a second eastbound through lane and restriping the southbound approach to provide a left-turn lane, three through lanes, and a right-turn lane to add capacity to the intersection, though the additional capacity continued to result in LOS E operations rendering the impact not fully mitigated. In addition, the plan recommends a Class IV Cycle Track be striped on Pacific Highway. The additional traffic added by the Proposed Action Alternatives would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, the EIS recommends that the Proposed Action Alternatives implement the Airport Development Plan improvements, where feasible, and the

impact at this intersection will remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 AND TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.

- TRANS MIT-24. *Intersection #34. Pacific Highway/Laurel Street* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the removal of a westbound through land and addition of a second eastbound left-turn lane, conversion of a southbound through lane into a second right-turn lane, and re-coordination of the signals along Laurel Street. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. Implementation of these improvements in the Airport Development Plan showed the intersection would continue to operate at poor LOS conditions rendering the impact not fully mitigated. The additional traffic added by the Proposed Action Alternatives would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action Alternatives implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 AND TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-25. *Intersection #35. Harbor Drive/Laurel Street* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a third eastbound left-turn lane and removal of an eastbound through lane to add capacity to the intersection, though the additional capacity continued to result in poor LOS operations rendering the impact not fully mitigated. The additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action Alternatives implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 AND TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-26*. Intersection #36. Pacific Highway/Sea World Drive* – There are no planned improvements in the Mission Bay Park Master Plan at this intersection. To improve operations at this intersection, any planned improvements should include an additional southbound left-turn lane from Sea World Drive to eastbound Pacific Highway. Implementation of this improvement would mitigate the impact to below a level of significance.
- TRANS MIT-27. *Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street* – Per the Peninsula Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a five-lane Collector with a center left-turn lane with a LOS E capacity of 37,500 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 2,500 ADT of capacity over existing conditions. These

improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

- TRANS MIT-28. *Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-29. *Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-30. *Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-31. *Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-32. *Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 Eastbound Ramps* – There are no planned improvements in the Old Town Community Plan along this street segment. Additional lanes are needed on Taylor Street to increase the capacity along this roadway. However, due to the historic nature of the Old Town community, the Community Plan does not propose any road widening or significant capacity improvements. Additionally, there is not enough right-of-way available along this segment of Taylor Street to accommodate two additional through lanes and a center median while maintaining a Class II bicycle facility. Therefore, the impact would remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 AND TRANS MGMT-2). These measures

would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.

- TRANS MIT-33. *Street Segment #11. Pacific Highway: Sea World Drive to Taylor Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge would be infeasible. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-34. *Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard and Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue* – There are no planned improvements in the Midway-Pacific Highway Community Plan along these street segments. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations at intersections along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-35. *Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street and Street Segment #16. Pacific Highway: Witherby Street to Washington Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along these street segments. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue

interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

- TRANS MIT-36. *Street Segment #17. Pacific Highway: Washington Street to Sassafras Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 AND TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-37. *Street Segment #19. Morena Boulevard: Friars Road to Interstate 8* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Morena Boulevard to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge to four lanes would be infeasible. Therefore, the impact would remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 AND TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-38. *Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street* – Per the Linda Vista Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Linda Vista Road currently functions as a four-lane Collector with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Road with a raised median with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-39. *Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Kurtz Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

- TRANS MIT-40. *Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Sports Arena Boulevard currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-41. *Street Segment #26. Midway Drive: East Drive to Rosecrans Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional capacity is needed on Midway Drive to improve operations along this roadway. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. Due to the lack of available right-of-way, widening the roadway to four-lane Major Arterial standards would be infeasible. Therefore, the impact would remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures. These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-42. *Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-43. *Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports LOS C results. However, the additional traffic added by the Proposed Action Alternatives degrades roadway operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action Alternatives implement the Community Plan improvements, where feasible, and the impact on this street segment will remain significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures (TRANS MGMT-1 and TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-44. *Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Lytton Street currently functions

as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with an LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

- TRANS MIT-45. *Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a raised median with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-46. *Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 30,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-47. *Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports mid-LOS D results. However, the additional traffic added by the Proposed Action Alternatives degrades roadway operations to significant levels. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
- TRANS MIT-48. *Street Segment #33. Hancock Street: Witherby Street to Noell Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street

segment. Additional lanes are needed on Hancock Street to increase the capacity along this roadway. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

- TRANS MIT-49. *Street Segment #37. W. Washington Street: Hancock Street to University Avenue* – There are no planned improvements in the Uptown Community Plan along this street segment. Additional lanes are needed on Washington Street to increase the capacity along this roadway. Widening this section of Washington Street requires substantial grading and filling on both sides of the roadway. On the south side, a steep grade abuts the shoulder. On the north side, a drainage ditch lies adjacent to the roadway. The physical constraints of widening this segment of Washington Street would render this impact significant and unavoidable. Given the limits on physical mitigation at this location, the EIS recommends preparation of a TDM plan and participation in the implementation of TSM measures(TRANS MGMT-1 AND TRANS MGMT-2). These measures would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-50. Freeway Segment #2. Interstate 5: Interstate 8 to Old Town Avenue; Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street; Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street; Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue; Freeway Segment #9. Interstate 5: 1st Avenue to 6th Avenue; Freeway Segment #10. Interstate 5: 6th Avenue to State Route-163 – The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along these freeway segment. The improvements are anticipated to be completed by the Year 2050; however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given the significant impacts, the EIS recommends preparation of a TDM plan to reduce overall vehicular traffic (TRANS MGMT-1), which would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.
- TRANS MIT-51. Freeway Segment #12. Interstate 8: Interstate 5 to Morena Boulevard; Freeway Segment #13. Interstate 8: Morena Boulevard to Hotel Circle/Taylor Street; Freeway Segment #14. Interstate 8 Hotel Circle/Taylor Street to Hotel Circle; Freeway Segment #15. Interstate 8 Hotel Circle to State Route-163 – SANDAG and Caltrans jointly prepared an Interstate 8 Corridor Study (preliminary draft dated August 2016). This study analyzed transportation alternatives on Interstate 8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the ROI that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South and Taylor Street interchange, among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U, and a new freeway overpass Interstate 8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed

several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given the significant impacts, the EIS recommends preparation of a TDM plan to reduce overall vehicular traffic (TRANS MGMT-1), which would partially mitigate this significant impact. Additional details on these measures are included in Appendix E.

- TRANS MIT-52. *Ramp Meter #1. Interstate 5 Northbound from Old Town Avenue/Moore Street* – Caltrans and SANDAG, as part of the Airport Connectivity Analysis, have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing Interstate 5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. Additional capacity would be added to the interchange that would improve the queuing operations for vehicles destined to Interstate 5 northbound. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

In addition to suggesting location-specific mitigation measures such as modified intersection layouts and interchange designs, Appendix E provides detailed information on the TSM strategies, including a smart/complete corridor along Pacific Highway from Taylor Street to Laurel Street and other Intelligent Transportation Systems infrastructure. Table ES-2 in Appendix E provides an overview of future impacts by alternative, along with whether or not the impact can be mitigated based on the recommendations for improvements provided.

Active Transportation Measures

This EIS also categorizes recommendations for pedestrian, bicycle and transit modes of transportation as “Tier 1” and “Tier 2” improvements. The Navy’s analysis included Tier 1 improvements as potential mitigation measures for future implementation, and Tier 2 improvements for consideration. In total, the Navy’s analysis recommended implementation of 13 pedestrian and bicycle improvements and consideration of 13 additional pedestrian and bicycle improvements. For the transit network, the EIS recommends four improvements to be further evaluated for feasibility of implementation. Similar to traffic mitigation measures, additional details would be known in the future that would determine potential mitigation responsibilities based on land use under the Proposed Action Alternatives. Prior to finalizing a lease or land transfer, the Navy will identify appropriate NEPA mitigation measures to be required as part of any future agreement. While local agencies would physically implement any potential mitigation deemed necessary, cost share would be determined as part of future development agreements.

- TRANS MIT-53. *Tier 1 Pedestrian Improvements* – The following improvements could be implemented as potential mitigation as outlined in any future lease, land transfer, or development agreement:
    - P-1: Pacific Highway, between Old Town Transit Center Driveway and Witherby Street – Upgrade the sidewalk classification on the east side of Pacific Highway, between Old Town Transit Center Driveway and Witherby Street to a corridor sidewalk classification for Proposed Action Alternatives 2 and 3 and district sidewalk classification for Proposed Action Alternatives 4 and 5.

- P-2: Sports Arena Boulevard, between Rosecrans Street and Pacific Highway – Install missing sidewalks per connector sidewalk classification on both sides of Sports Arena Boulevard, between Rosecrans Street and Pacific Highway.
- P-3: Midway Drive, between Rosecrans Street and Barnett Avenue – Install missing sidewalks per connector or corridor sidewalk classifications on the north side of Midway Drive, between Rosecrans Street and Barnett Avenue.
- P-4: Witherby Street, between Pacific Highway and Hancock Street – Install missing sidewalks per connector sidewalk classification on the west side of Witherby Street, between Pacific Highway and Hancock Street.
- P-5: Sports Arena Boulevard/Rosecrans Street Intersection – Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-15 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
- P-6: Pacific Highway/Witherby Street Intersection – Conduct a feasibility assessment of the pedestrian improvements shown Figure 3-16 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
- P-7: Midway Drive/Enterprise Street Intersection – Conduct a feasibility assessment of the pedestrian improvements described in Page 13 of the Midway-Pacific Impact Fee Study. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
- P-8: Barnett Avenue/Midway Drive Intersection – Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-13 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.

- TRANS MIT-54. *Tier 2 Pedestrian Improvements* – The following improvements should be considered as potential mitigation as outlined in any future lease, land transfer, or development agreement:
  - P-9: Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street – Install missing sidewalks per connector sidewalk classification on both sides of Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street.
  - P-10: Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street – Install missing sidewalks per connector sidewalk classification on the south side of Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street.
  - P-11: Jessop Lane, between Enterprise Street and Barnett Avenue – Install missing sidewalks on both sides of Jessop Lane, between Enterprise Street and Barnett Avenue.
  - P-12: Kurtz Street, between Rosecrans Street and Pacific Highway – Install missing sidewalks per connector sidewalk classification on both sides of Kurtz Street, between Rosecrans Street and Pacific Highway.
  - P-13: Smith Street, between Pacific Highway and Kurtz Street – Install missing sidewalks on both sides of Smith Street, Between Pacific Highway and Kurtz Street.
  - P-14: Old Town Transit Center Driveway – Install missing sidewalks on south side of Old Town Transit Center Driveway off Pacific Highway.

- TRANS MIT-55. *Prepare a Pedestrian Master Plan*. The plan would guide design and implementation of policies/programs to enhance access and mobility around and within the site for pedestrians of all ages and abilities.
- TRANS MIT-56. *Tier 1 Bicycle Improvements* – The following improvements should be implemented as potential mitigation as outlined in any future lease, land transfer, or development agreement:
  - B-1: Pacific Highway, between Old Town Transit Center Driveway.
  - Witherby Street – Provide Class IV bicycle facilities consistent with the Midway-Pacific Highway Community Plan.
  - B-2: Witherby Street, between Pacific Highway and Hancock Street – Provide Class II bicycle facilities consistent with the Midway-Pacific Highway Community Plan.
  - B-3: Sports Arena Boulevard, between Rosecrans Street and Pacific Highway – Provide Class II bicycle facilities consistent with the Midway-Pacific Highway Community Plan.
  - B-4: Midway Drive, between Rosecrans Street and Barnett Avenue – Provide Class I bicycle facilities consistent with the Midway-Pacific Highway Community Plan.
  - B-5: Enterprise Street, between Pacific Highway and Midway Drive – Upgrade the bicycle classification from Class III to Class II.
- TRANS MIT-57. *Tier 2 Bicycle Improvements* – The following improvements should be considered as potential mitigation as outlined in any future lease, land transfer, or development agreement:
  - B-6: Taylor Street, between Kurtz Street and Presidio Drive – Provide Class II bicycle facilities consistent with the Midway-Pacific Highway Community Plan and the Old Town Community Plan.
  - B-7: Juan Street, between Taylor Street and Witherby Street – Provide Class III bicycle facilities consistent with the Old Town Community Plan.
  - B-8: Barnett Avenue, between Henderson Avenue and Midway Drive – Provide a Class II bicycle facility (south side only) consistent with the Midway-Pacific Highway Community Plan.
  - B-9: Hancock Street, between Old Town Avenue to Noell Street – Provide a Class II bicycle facility consistent with the Midway-Pacific Highway Community Plan.
  - B-10: Old Town Avenue, between Hancock Street and San Diego Avenue – Provide a Class II bicycle facility consistent with the Midway-Pacific Highway Community Plan and Old Town Community Plan.
  - B-11: Sports Arena Boulevard, between Kemper Street and 1,050 feet east of Kemper Street – Replace the existing the Class III bicycle facility on the south side of Sport Arena Boulevard to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan.
  - B-12: Rosecrans Street, between Madrid Street and Midway Drive – Replace the existing the Class III bicycle facility on the west side of Rosecrans Street to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan.
- TRANS MIT-58. *Prepare a Bicycle Master Plan for the Proposed Action Alternatives*. The plan would guide design and implementation of policies/programs to enhance access and mobility around and within the site for bicyclist of all ages and abilities.

3.2.3.10 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, the transportation network would experience significant impacts from implementation of Alternative 1, Alternative 2, Alternative 3, Alternative 4, or Alternative 5. However, mitigation strategies can alleviate these impacts. Table 3.2-13 outlines the number of significant impacts by alternative.

Table 3.2-13 Number of Significant Impacts Calculated for Each Proposed Action Alternative

Proposed Action Alternatives	*Intersections*	*Segments*	*Freeways*	*Ramp Meters*	*Reduced to Less than Significant with Potential Mitigation*	*Remain Significant and Unavoidable*
Alternative 1	8	1	0	0	5	4
Alternative 2	25	25	10	1	32	29
Alternative 3	23	25	10	1	33	26
Alternative 4	26	25	10	1	33	29
Alternative 5	26	25	10	1	33	29

Based on the LOS analysis, Implementation of Alternative 1 would have the fewest impacts to the ROI locations in this report. The Navy's analysis recommends mitigation measures for the nine total impacted locations, of which five would be fully mitigated and four impacts would remain significant and unavoidable.

Implementation of Alternative 2 would result in 61 significant impacts. The Navy's analysis recommends mitigation measures for the 61 total impacted locations, of which 32 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Implementation of Alternative 3 would result in slightly fewer significant impacts than Alternative 2. The Navy's analysis recommends mitigation measures for the 59 total impacted locations, of which 33 would be fully mitigated and 26 impacts would remain significant and unavoidable.

Implementation of Alternative 4 would result in the similar significant impacts as Alternatives 2 and 3. The Navy's analysis recommends mitigation measures for the 62 total impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Implementation of Alternative 5 would result in the same significant impacts as Alternative 4. The Navy's analysis recommends mitigation measures for the 62 total impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Appendix E provides a summary of less than significant impacts to transportation facilities in the ROI (e.g., facilities where operating conditions may degrade due to added trips but remain within an acceptable LOS range).

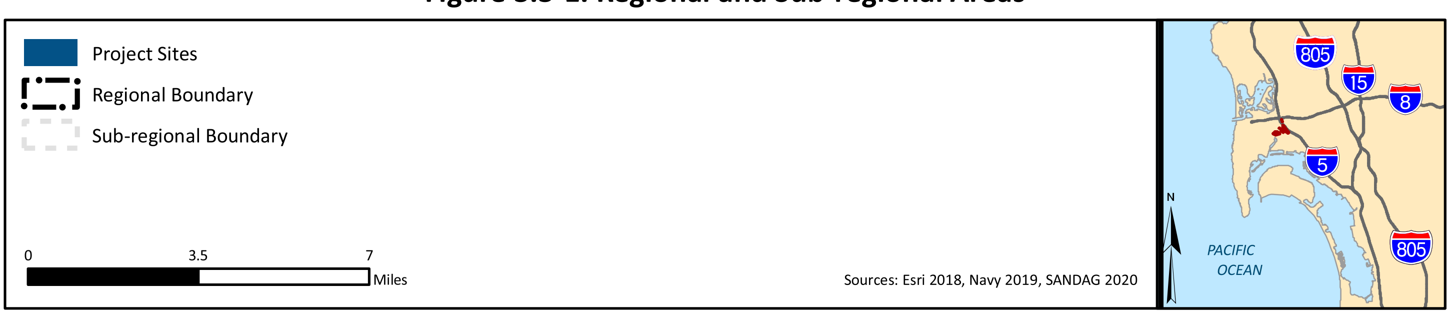
3.3 Visual Resources

Visual resources encompass the natural and built features of the landscape that are visible from public vantage points and that contribute to an area's visual quality. Public perception of visual resources is an important component of environmental quality that can be affected by project-related changes to the environment. Visual resources are an important reflection of the relationship between people and their physical environment.

The following definitions are provided to aid the reader in understanding key visual resource terminology used throughout this section:

- Visual resources: the individual components of land, water, vegetation, built forms, and spatial arrangements that contribute to the visual quality of an area.
- Visibility: the degree to which physical features and areas in the environment can be seen from a particular point.
- Viewshed: a composite of individual views that delineate the limits of visibility of a particular point in the environment, or the view of an area from a particular vantage point. A viewshed is dependent upon the landform conditions of an area and the built environment that is placed upon those landforms.
- Viewer groups: individuals expected to have similar perceptions of and common reactions to the quantity and types of changes in the visual environment, based on factors such as the frequency and duration of their exposure to the changes and the activities of the viewers while the changes are visible.
- Aesthetics: the general description of how visual elements combine to make a pattern that is either dynamic or boring, unique or common, or that is considered cutting edge or traditional.
- Regional and sub-regional visual resources: Western San Diego County comprises visually distinct regions that are a mix of natural and man-made elements. OTC is located within the San Diego Central Coast and Bay region, which is commonly considered to extend from the end of Point Loma and downtown San Diego in the south, northward to Torrey Pines State Park on the coast and Interstate 15 inland. A visual sub-region is a geographically defined area that has a similar viewshed within the larger region. Landform edges (natural features with similar physical characteristics or attributes) can define the limits of a sub-region. Figure 3.3-1 shows the region and sub-region surrounding OTC.
- Area of Visual Effect (AVE): the AVE delineates the physical extent of the visual environment surrounding the Proposed Action Alternatives that could be affected by the project and is therefore the primary focus area for the impact analysis.
- Landscape Assessment Unit (LAU): A geographic area that has similar visual character and visual organization based on land use, built forms, level of maintenance, and mixture of natural and man-made elements. LAUs are used to identify typical viewer groups that may live, work, play, learn, or shop in these areas.
- Sub-regionally important viewing scene: A group of distant visual resources that are not common within a sub-region, are generally harmonious and dynamic, and have a high visual quality and intact composition that contributes to the quality of the view. Examples include the downtown San Diego skyline or views of Mission Bay.

Figure 3.3-1. Regional and Sub-regional Areas



- View corridor: Open airspace that allows a person to see a distant view from a viewing location without physical elements blocking that corridor.
- Viewing location: The spot at which a viewer group would stand, sit, or move through to see a viewing scene.
- Viewing scene: Viewing scenes are at the outer edge of views. It is not necessary for a viewing location to see the full extent of a viewing scene. However, a minor slice of a broad viewing scene is substantially less important than a completely unobstructed viewing scene. This is especially true for a distant view that includes the horizon line. Of importance is an unobstructed view of a broad horizon line in the ocean. The dynamics of view quality puts a great deal of impact concern on the first element that breaks this continuous horizon line. As nearly important, a broad mountain, valley, hill, or canyon that is currently a fully open viewing scene becomes problematic for a project that first breaks this continuity of view.
- View quality: A concept that reflects the viewing scenes that are considered to be unique and highly valued and the likelihood of the project to negatively change these viewing scenes or block the viewing corridor or somehow remove a viewing location.
- Landform quality: A concept that reflects the degree to which natural landforms contribute to the visual character and quality of an area.
- Sub-areas: Defined by viewshed limits within the foreground and middle ground distance zones, as well as LAUs that define areas of similar character, land use, and viewer groups.
- Visual character: the current arrangement of the built environment in terms of styles, themes, design sense, building materials, landscapes and other visual resources that tend to be either consistent, diverse or highly variable. Visual character-defining resources and features include:
  - landforms: types, gradients, and scale
  - vegetation: types, size, maturity, and continuity
  - land uses: height, bulk, scale, and architectural detail
  - open space: type (parks, reserves, greenbelts, and undeveloped land), extent and continuity
  - water bodies, historic structures, and downtown skylines
  - apparent composition or mixture of character and land uses
  - apparent upkeep and maintenance
- Visual contrast: the amount of change that is noticed as a result of the proposed project and the visually prominent elements that the project includes and how they appear against the backdrop of the current visual environment.
- Visual sensitivity: the ability of a landscape unit to absorb change without being noticed. This is often determined by the number of things that are consistent or highly varied.
- Visual quality: the current arrangement of visual resources into patterns that range from well-organized or chaotic, unique or common, dynamic or balanced. Visual quality is evaluated by identifying the vividness, unity, and intactness present in the viewshed. These elements of visual quality are defined as follows:
  - *Vividness* is the visual power or memorability of landscape components as they combine in distinctive visual patterns. Potential values include:
    - very low: monotonous/common elements
    - low: boring or very commonly repeated
    - moderate: some elements are unique
    - high: overall composition is very vivid

  - *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual man-made components in the landscape. Potential values include:
    - very low: chaotic/disorganized elements
    - low: no sense of unified character
    - moderate: most all elements appear to be related
    - high: all elements are unified
  - *Intactness* is the visual integrity and maintenance of the natural and man-made landscapes and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings. Potential values include:
    - very low: poorly maintained/damaged elements
    - low: poorly maintained with some intactness noticed
    - moderate: many elements are intact and well maintained
    - high: most elements are intact and well maintained
- <u>Light and glare</u>: Perception of the visual environment can be affected by lighting levels and the reflectance of light, and it can affect human activities in these environments. The presence of high levels of light and glare can cause discomfort, decrease safety, and change the way we use a space.
- <u>Shade and shadow</u>: Structures can alter the amount of light (e.g., sunlight or moonlight) that transmits to surrounding areas. Deep shade that did not exist before a project that affects adjacent properties, needs to be considered in terms of the activities they may affect.

The following subsections define the AVE for this analysis, describe the existing conditions of the visual environment surrounding OTC, and analyze potential impacts to the visual environment from the implementation of the Proposed Action and alternatives. The visual impact technical study prepared for this project (Appendix F) describes in more detail the objective research, modeling, and other methods applied in the evaluation of the visual resources baseline conditions and potential effects of the Proposed Action.

3.3.1 Area of Visual Effect

The AVE for the Proposed Action is defined as a 3-mile radius within the viewsheds emanating from OTC, as shown in Figure 3.3-2. These viewsheds and the associated AVE were determined by performing a computer-based viewshed analysis using ArcGIS Spatial Analyst software. This viewshed analysis applied a regional digital elevation model (a landform-based model that does not include built environment features) to determine the maximum extent of the surrounding area from which the existing and proposed OTC buildings would be visible (without regard to other structures in the area, which would otherwise constrain the shape of the viewsheds and reduce the radius of the AVE). The model was applied for the 55-foot height of both the existing OTC buildings and those proposed under Alternative 1, as well for the tallest buildings proposed under Alternatives 2 and 3 (240 feet) and Alternatives 4 and 5 (350 feet), to yield the viewsheds and maximum AVE applicable to the Proposed Action Alternatives.

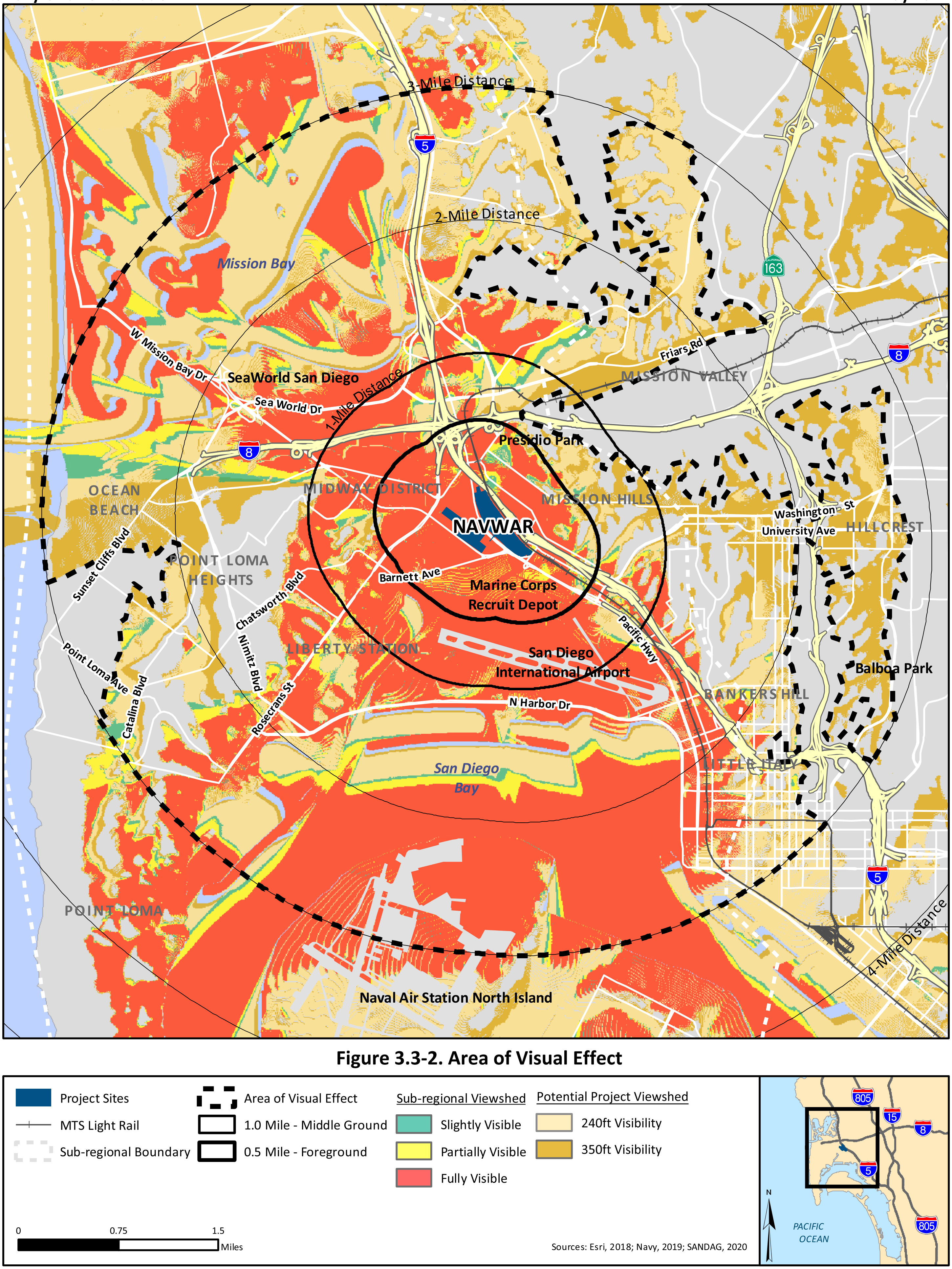


Figure 3.3-2. Area of Visual Effect

As shown in Figure 3.3-2, the AVE fits mostly within a portion of the sub-regional visual resource boundary, but also extends outside that boundary in a few places along its eastern edge. This AVE includes diverse natural landforms, including canyons, bluffs, drainages, the San Diego River, and a sizeable, urbanized area. Because OTC covers a sizeable land area (both length and width), most areas in the AVE have visibility of OTC's existing structures, even though the existing buildings are only 55 feet tall.

Those areas within the AVE that do not have visibility of existing OTC structures are shielded behind landforms, but the taller structures proposed under certain action alternatives would be visible from these areas. Within the AVE, the foreground is considered to be 0.5 miles from the edges of OTC (2,640 linear feet), the middle ground is 0.5 to 1 mile (out to 5,280 linear feet), and the background is 1 to 3 miles (out to 15,840 linear feet). Anything beyond 3 miles is considered to be a distant background and is not included in the AVE. Table 3.3-1 tabulates the acres of visibility and the 2016 population within the foreground, middle ground, and background distance zones in the AVE.

Table 3.3-1 OTC Site Visibility Analysis within the AVE

Distance from OTC	*Acres with No Visibility of 55-foot Tall Buildings at OTC[1]*	*Acres with Slight Visibility of 55-foot Tall Buildings at OTC*	*Acres with Partial Visibility of 55-foot Tall Buildings at OTC*	*Acres with Full Visibility of 55-foot Tall Buildings at OTC*	*Additional Acres with Visibility of 240-foot Tall Buildings at OTC[2]*	*Additional Acres with Visibility of 350-foot Tall Buildings at OTC[3]*
0.5 mile	95	37	90	980	56	76
0.5 - 1 mile	689	58	122	1,118	337	508
1 - 3 miles	8,707	394	767	5,074	3,799	5,949
Subtotals	9,490	489	979	7,172	4,183	6,533
Distance from OTC	*Population with No Visibility of 55-foot Tall Buildings at OTC*	*Population with Slight Visibility of 55-foot Tall Buildings at OTC*	*Population with Partial Visibility of 55-foot Tall Buildings at OTC*	*Population with Full Visibility of 55-foot Tall Buildings at OTC*	*Additional Population with Visibility of 240-foot Tall Buildings at OTC*	*Additional Population with Visibility of 350-foot Tall Buildings at OTC*
0.5 mile	710	167	605	6,592	456	587
0.5 - 1 mile	5,818	449	855	4,966	2,277	3,966
1 - 3 miles	99,756	2,703	4,576	21,623	32,094	65,851
Subtotals	106,284	3,319	6,036	33,181	34,827	70,404

Notes: (1) Height of the existing buildings on OTC and the proposed maximum building height under Alternative 1.
(2) Proposed maximum building height under Alternatives 2 and 3.
(3) Proposed maximum building height under Alternatives 4 and 5.

3.3.2 Regulatory Setting

Laws and regulations applicable to visual resources include:

- NEPA of 1969
- CEQ regulations to implement NEPA
- Coastal Zone Management Act of 1972, as amended

Additionally, state regulations include:

- CEQA
- California Coastal Act of 1976

- California Scenic Highway Program

The City of San Diego also provides guidance for preserving visual resources in the following sources:

- City of San Diego General Plan (City of San Diego, 2013a, 2015)
- Midway-Pacific Highway Community Plan (City of San Diego, 2019a)
- Old Town San Diego Community Plan (City of San Diego, 2018b)
- Uptown Community Plan (City of San Diego, 2019b)
- Peninsula Community Plan and Local Coastal Program Land Use Plan (City of San Diego, 2004)
- San Diego Municipal Code Chapter 13 Article 2 Division 5 (Coastal Height Limit Overlay Zone)

Appendix B provides additional information about these laws and regulations.

3.3.3 Affected Environment

This section describes the current visual environment of OTC and within the larger AVE, which collectively serve as the baseline conditions against which the Proposed Action Alternatives is compared in Section 3.3.4 to identify potential visual resources impacts.

3.3.3.1 Approach to Characterizing the Affected Environment

Visual Setting

To describe the visual setting in detail, all areas in the foreground and middle ground of the AVE (up to 1-mile from OTC) were analyzed and grouped into LAUs. The LAUs were grouped by land use type (residential, commercial, office, industrial/military/special event, lodging/schools/churches, parks, and transportation). Only those LAUs that fall within the foreground (0.5 mile from OTC) were classified, numbered, and ranked for quality and sensitivity to change. Section 1.3 of Appendix F provides detailed information on the LAU ranking process, and the LAU visual quality ratings are identified in Tables 1.3-6 through 1.3-11 in Appendix F. The LAUs were used to help identify 11 sub-areas, which contain LAUs of similar character, land use, and viewer groups (see Appendix F, Section 1.5 for further information on viewer groups and their potential sensitivity to visual change). The sub-areas were further defined by their viewshed limits.

Once the LAUs, sub-areas, and viewer groups were determined, a viewing scene analysis was conducted using viewshed models in the ArcGIS Spatial Analyst software. The landform-based model is the foundation for mapping views, which represent the theoretical limits of a viewshed. The modeling software utilizes multiple points placed on the outer edges and tops of buildings or structures to evaluate visibility within the viewshed. Viewshed models were run to evaluate how visible the current buildings at OTC are from various viewing locations within the AVE. The results of multiple runs are combined into a composite viewshed are shown for the AVE in Figure 3.3-2. Appendix F provides additional detail on the process and results of the viewshed modeling.

Sub-regionally important viewing scenes that could potentially be impacted by the construction of the Proposed Action Alternatives were then identified (see Appendix F). The existing visibility of these sub-regionally important viewing scenes was modeled with the ArcGIS Spatial Analyst software (see Figures 3.1.1 to 3.1.10 in Appendix F for the individual maps). State-designated and scenic highways in the AVE were also identified.

Establishing Key Observation Points for Further Analysis

Similar to the sub-regional viewing scene analysis, the sub-areas were evaluated based on OTC being the focus of the viewing scene. Public rights-of-way were analyzed for visual access to OTC as shown in Figure 3.3-3. Based on the combination of public rights-of-way with visual access to OTC and the sub-regional viewing scenes, potential viewing locations that could serve as key observation points (KOPs) for the Proposed Action Alternatives were identified. In all, over 1,300 photographs were taken from over 500 locations on 8 days over a 4-month period. These field visits were conducted after exploration of the various locations throughout the AVE under a variety of weather conditions. The photographs were taken to demonstrate views, viewing scenes, visibility analysis, character analysis, and current site conditions.

From this initial data gathering, 30 locations were identified as candidate KOPs for further evaluation with preliminary three-dimensional (3D) model overlays. The preliminary 3D model overlays for all candidate KOPs are provided in Appendix F. The candidate KOPs were evaluated based on a range of criteria such as viewing locations, distances, viewer types, and visibility conditions as described in Appendix F.

The candidate KOPs were narrowed down to 10 KOPs that were best suited to analyze the Proposed Action Alternatives via detailed simulations. Considerations included:

- Which viewer groups may be impacted
- What level of viewer sensitivity exists:
  - not seen
  - low: would not notice change
  - moderate: noticed/not concerned
  - moderately high: would notice/would be concerned
  - high: sensitive to change
- The distance to OTC Site 1 or OTC Site 2:
  - foreground (less than 0.5 mile)
  - middle ground (0.5 to 1 mile)
  - background (1 to 3 miles)
  - distant background (greater than 3 miles)
- Which of the ten sub-regional viewing scenes may be impacted
- What level of potential for view blockage:
  - none
  - distant: would become part of the view scene
  - slight: less than 5 percent view blockage
  - low: 5-10 percent view blockage
  - moderate: 10-15 percent view blockage
  - high: greater than 15 percent view blockage

The final list of KOPs carried forward for simulations is provided in the following section, and the photos showing the existing conditions from each KOP are provided above the simulations for the Proposed Action Alternatives in Section 3.3.4.

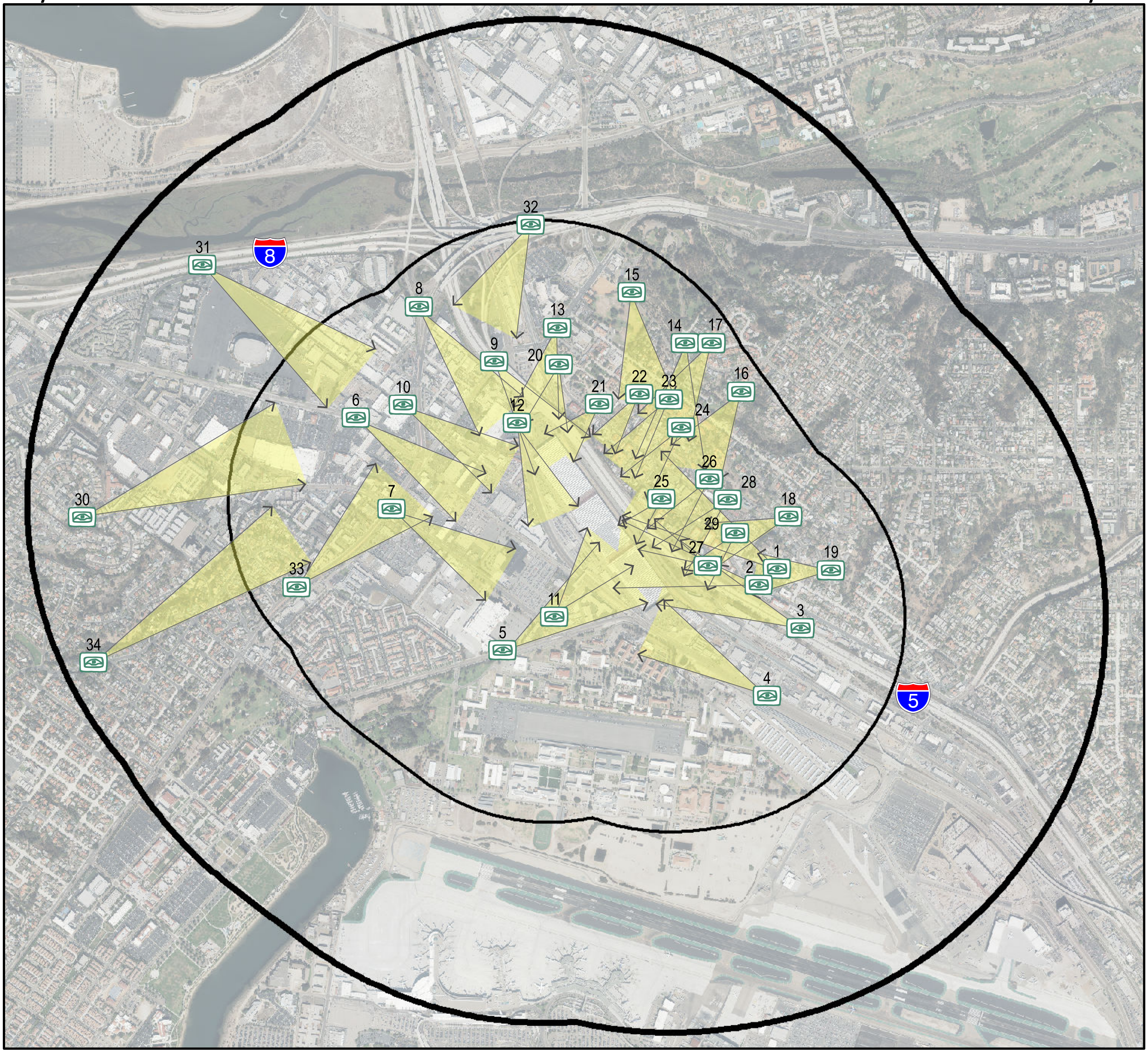


Figure 3.3-3. Public Rights-of-way with Visual Access to OTC

1.0 Mile

0.5 Mile

Public Road View Location

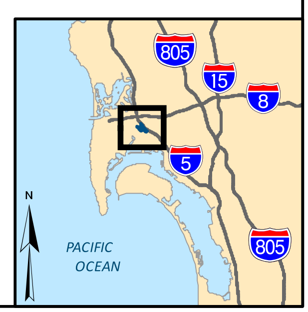
View Direction

View Highlighted Area

1 - California Street
2 - San Diego Ave.
3 - I-5
4 - Pac. Highway Northbound
5 - Barnett Ave.
6 - Sports Arena Blvd.
7 - Midway Dr.
8 - I-5 & I-8 Freeway Offramps
9 - I-5 Southbound
10 - Kurtz St.
11 - Enterprise St.
12 - Pac. Highway Southbound
13 - Taylor St.
14 - Cosoy Way
15 - Jackson St.
16 - Arista St.
17 - Alta Mirano Way
18 - Linwood St.
19 - Bandini St.
20 - Congress St.
21 - Mason St.
22 - Twiggs St.
23 - Harney St.
24 - Conde St.
25 - Arista St.
26 - Ampudia St.
27 - Moore St. I-5 Offramp
28 - Old Town Ave.
29 - Hortensia St.
30 - Kemper St.
31 - I-8 East Bound
32 - I-8 Westbound
33 - Rosecrans Blvd.
34 - Chatsworth Blvd.

0 0.25 0.5 Miles

Sources: ESRI, 2018; Navy, 2019; SANDAG, 2020



Shade and Shadow

A shade and shadow analysis was performed in SketchUp, a 3D modeling program. The winter (December 21st) and summer (June 20th) solstices and building heights were used to calculate maximum shade/shadow areas associated with the existing OTC buildings.

Light and Glare

Existing sources of light and glare at OTC were analyzed through digital imagery via Google Earth and other sources.

3.3.3.2 Affected Visual Environment

OTC Visual Environment

The overall impression of OTC Site 1 is that of a tall building laying on its side. The perceived structure is nearly 0.5-mile in length that is 47 feet tall and 400 feet wide, when in fact it is three warehouse structures that are interconnected by architectural features. These warehouse structures have been in this location since the early 1940s and were formerly used as a WWII era fabrication plant (see Section 3.6, *Cultural Resources*, for additional detail).

OTC Site 1 is completely covered either by buildings or parking lots. No special design or landscape treatments exist. The original three large warehouse buildings do maintain some of their original simple and austere but unique form and character. The view of OTC Site 1 is memorable and vivid because of the size and consistently repeating saw-tooth roof structure of the warehouse buildings. Occasional views into open hanger doors provide visual interest. OTC Site 1 is mostly unified because of the repeating scale and overall extended structure. OTC Site 1 has very little variety and becomes somewhat monotonous given its overall length and repeating forms.

OTC Site 2 consists mostly of large surface parking lots on either end with the main building in the middle. The simple but elegant architectural treatments have an austere look but with materials and fenestration that is much more refined than most industrial buildings. Both OTC Site 1 and OTC Site 2 are void of site planning elements, amenities, and landscape treatments.

OTC is located within the City of San Diego's Midway-Pacific Highway Community Planning Area (see Section 3.4, *Land Use*, for additional information). OTC is federal property, and therefore the community does not have jurisdiction over its land use; however, the goals of the plan relating to visual resources are summarized briefly here, to provide context.

The Midway-Pacific Highway community vision is to develop a sustainable, compact land use pattern of attractive villages that focus development within one-half mile radius (10-minute walk) of trolley or rapid bus stations. Improving visual appeal, connectivity, and safety of existing and new streets is a primary community goal. New development is seen as an opportunity to change the community's visual appeal with cohesive new mixed- and multiple-use villages and districts that include housing, offices, retail, restaurants, parks, public spaces, and amenities to enhance the community's identity and livability. Additional detail related to the visual environment of the Midway-Pacific Community Planning Area is available in Appendix F.

AVE Visual Environment

The AVE is framed by landforms of the Point Loma Peninsula to the west, the Mount Soledad hills to the north, San Diego Bay to the south and the edge of the upper mesa areas of Clairemont and Uptown to the east. The overall visual character of the AVE is extremely diverse in the age of development, architecture, roadway layouts, landscape treatments, and how well each property or area is maintained. There are few uniform or harmonious elements of any kind in the area, although there are pockets or sub-areas that do have consistent character and uniformity.

The AVE includes several major transportation corridors, including rail lines and freeways, and the San Diego International Airport. Other land uses in the AVE range from low density residential to moderate density mixed-use housing; business and industrial parks; strip commercial and regional commercial; hospitals, schools, and government institutions; and a variety of entertainment facilities. Two major military installations (MCRD and portions of Naval Base Point Loma) are also located in the AVE. From a visual resources perspective, these wide-ranging land use types produce a broad variety of building scales, massing (or the general shape, form, and size of a building), and character. Most buildings in the AVE are 30 feet in height with a few exceptions being taller than 30 feet, like the Port District Building, the Pechanga Arena, elements at Sea World, the Education First's International Language campus, buildings at the University of San Diego, the Presidio, and the California Department of Transportation (Caltrans) headquarters.

Sub-Area Visual Environment

The 1-mile area around OTC (foreground and middle ground) has been further defined by delineating sub-areas. These sub-areas have been defined by viewshed limits, as well as landscape assessment units that define areas of similar character, land use and viewer groups as shown in Figure 3.3-4. The sub-areas do not necessarily match the community boundaries since they are based on visual elements and characteristics. The full 1-mile area around OTC has been considered, but a few areas that are outside of all potential viewsheds have been eliminated from the sub-areas, leaving some areas within the 1 mile not being classified.

The 1-mile buffer around OTC has been subdivided into 11 sub-areas. These sub-areas have been identified to help assure that each sub-area is analyzed for potential visual quality, view quality and community character impacts and that possible KOPs have been distributed equitably through the sub-region into the 11 sub-areas.

The **Mission Bay and Mission Valley** sub-area is made up of natural open spaces, including the San Diego River and Mission Bay open space areas. Another portion of the area consists primarily of industrial areas and business parks. This area is sometimes called the Morena District. The southern edge of the sub-area is defined by Interstate 8.

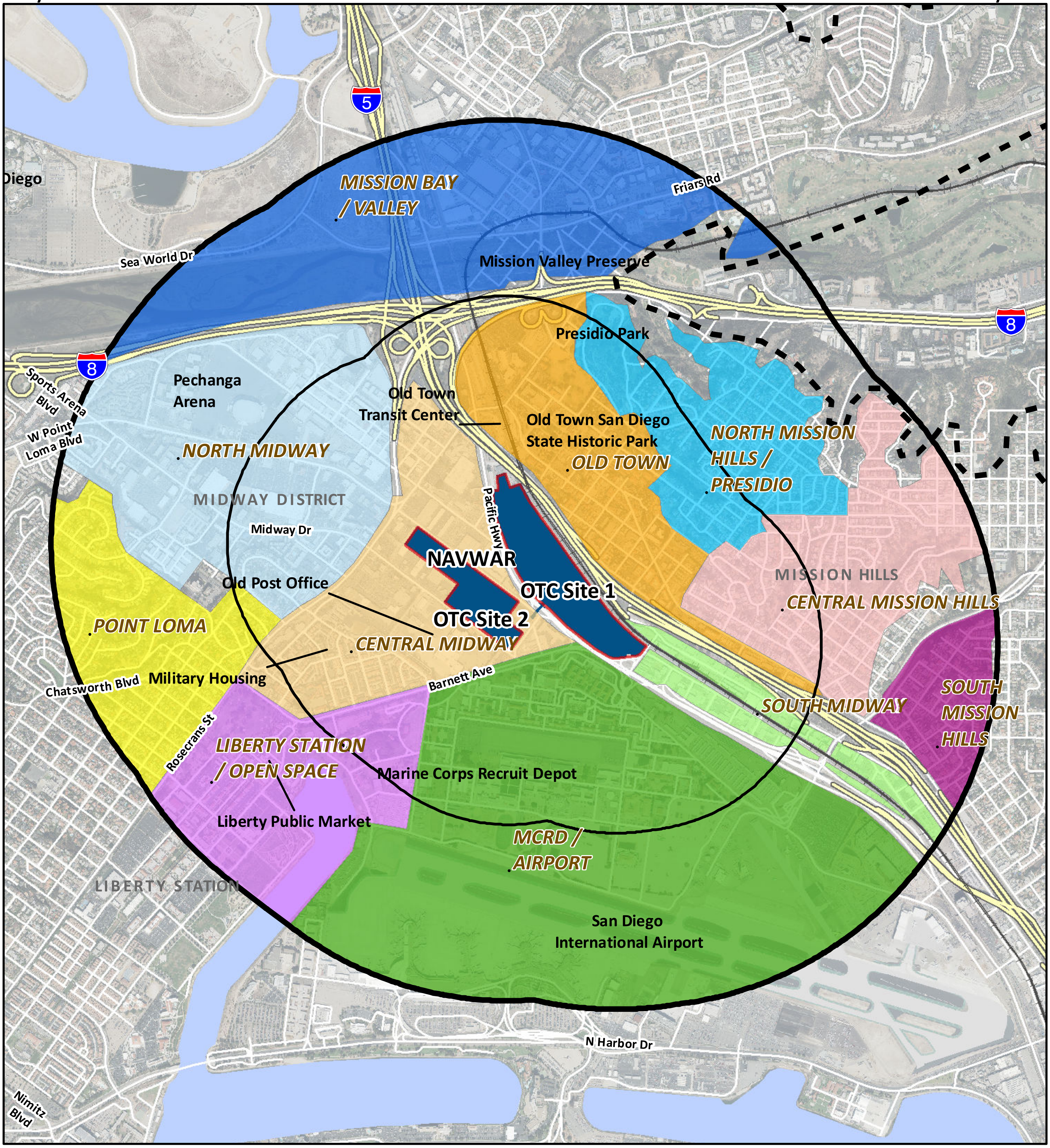
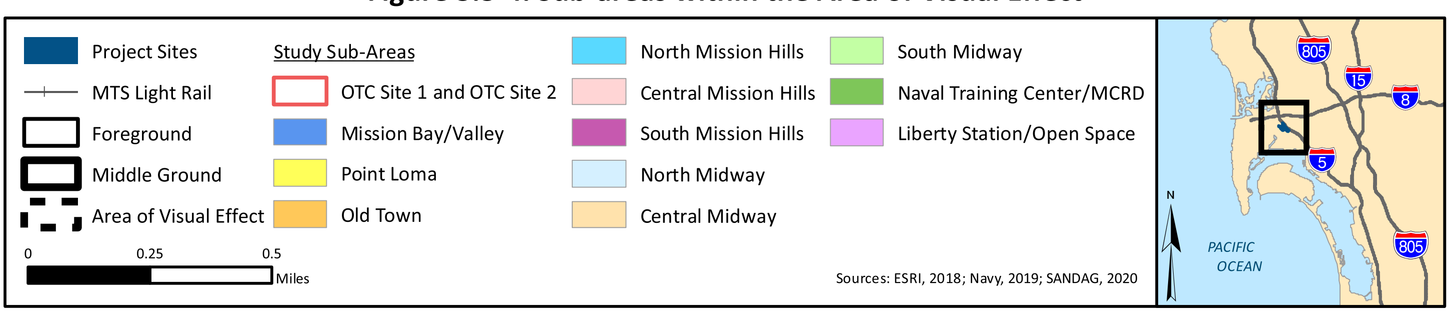


Figure 3.3-4. Sub-areas within the Area of Visual Effect



The **Midway District** consists of three segments of the Midway-Pacific Highway Community Plan area. These include the North, Central and South Midway/Pacific Coast Highway areas (considered three separate sub-areas for this analysis). This area consists of commercial retail, special event areas, business parks, industrial parks and the MCRD off-base housing area. One school, several churches and the County of San Diego Health and Human Services are found in this area.

Point Loma is represented by residential areas on the hillside, rising above the Midway District. This area is also sometimes call Loma Portal. The area consists of several historic and Mid-Century style homes and larger estates.

The former Naval Training Center, San Diego is found in the next sub-area. This area is now known as **Liberty Station**. The channel extension from San Diego Bay is also in this area. Since a portion of MCRD that contains officer housing and several recreational and open space areas are more similar to Liberty Station, they have been included in this area.

MCRD and the San Diego International Airport have been grouped together in the next sub-area. Although MCRD has a great deal of variety in land uses, most of it has similar design character. The airport is very different from MCRD, but it has been included since it relates to mostly industrial and operation areas similar to the south and southeast sides of MCRD.

Old Town is a well-defined sub-area with similar characteristics and land uses. The sub-area is defined on two edges by Interstate 5 and Interstate 8, as well as the San Diego River to the north. The area contains Caltrans District 11 headquarters and Old Town Historic State Park. The Old Town Transit Center integrates bus, the trolley, the Coaster heavy rail commuter service, as well as Amtrak. Most of Old Town is focused on tourism, but a substantial part includes older neighborhoods with single and multi-family units throughout.

Finally, the **Mission Hills** area has been segmented into three sub-areas: North, Central, and South Mission Hills. This historic and generally intact set of neighborhoods range from estates and single-family units in the north end, to more mixed neighborhoods with varying densities of multi-family housing areas to the south.

The acreage, existing 2016 population, and forecasted 2035 population in each of these sub-areas can be seen in Table 3.3-2 within 0.5 mile (foreground) of OTC and out to 1 mile (middle ground) in Table 3.3-3.

Table 3.3-2 Acreage and Population within 0.5 Mile (Foreground)

Sub-area	*Acres in Sub-area*	*2016 Population in Sub-area*	*2035 Population in Sub-area*
Mission Bay/Mission Valley/Morena District	0	0	0
Midway District (North, Central, South)	405	3,158	7,030
Point Loma	6	61	63
Old Town	216	907	945
Mission Hills/Presidio (North, Central, South)	142	1,201	1,180
Liberty Station/Channel/Open Space	35	393	346
Naval Training Center/MCRD	246	2,335	2,078
OTC Site 1 and OTC Site 2	70	16	1,120
Freeway, Railway and East of Mission Hills	81	24	183
Totals	**1,200**	**8,096**	**12,946**

Legend: MCRD = Marine Corps Recruit Depot; OTC = Old Town Campus.

Table 3.3-3 Acreage and Population 0.5 – 1.0 Mile (Middle Ground)

Sub-area	*Acres in Sub-area*	*2016 Population in Sub-area*	*2035 Population in Sub-area*
Mission Bay/Mission Valley/Morena District	378	850	627
Midway District (North, Central, South)	254	2,912	2,669
Point Loma	168	2,162	2,054
Old Town	26	9	1
Mission Hills/Presidio (North, Central, South)	327	3,641	3,534
Liberty Station/Channel/Open Space	173	392	338
Naval Training Center/MCRD	502	965	834
OTC Site 1 and OTC Site 2	0	0	0
Freeway, Railway and East of Mission Hills	441	2,609	2,811
Totals	**2,268**	**13,541**	**12,868**

Legend: MCRD = Marine Corps Recruit Depot; OTC = Old Town Campus.

Sub-regionally Important Viewing Scenes

The AVE shown in Figure 3.3-2 was evaluated to define viewing corridors that span the distance between viewing locations and viewing scenes that could be blocked by the Proposed Action Alternatives. The amount of blockage is a direct result of the size of the proposed building or structure, as well as the distance to viewer groups. The amount of the corridor that is blocked determines the extent of the view quality impacts. Generally, beyond 1 mile, a project becomes part of the background, making it part of the viewing scene instead of an obstruction to the corridor.

The sub-region has ten viewing scenes that are considered as sub-regionally important views as shown in Figure 3.3-5 and Figure 3.3-6 (see Appendix F for how these were identified). They are unique, broad, and intact areas that are well balanced and vibrant. Important viewing scenes are generally panoramic in nature, have dynamic unobstructed distant views and often signify a balance between the natural and man-made environments. The sample photographs of the sub-regionally important viewing scenes provided below were taken from within the AVE looking across OTC.

1. *San Diego River*

2. *Mission Bay*

3. *Mission Valley North Gateway (University of San Diego)*

4. *Mission Valley South Gateway (Presidio and Mission Hills)*

5. *Pacific Ocean to the West*

6. *Pacific Ocean to the Southwest*

7. San Diego Bay and North Island (Coronado)

8. Point Loma Hillside

9. Cabrillo Point

10. Downtown Skyline

Figure 3.3-5 Sample Photos of Sub-regionally Important Viewing Scenes

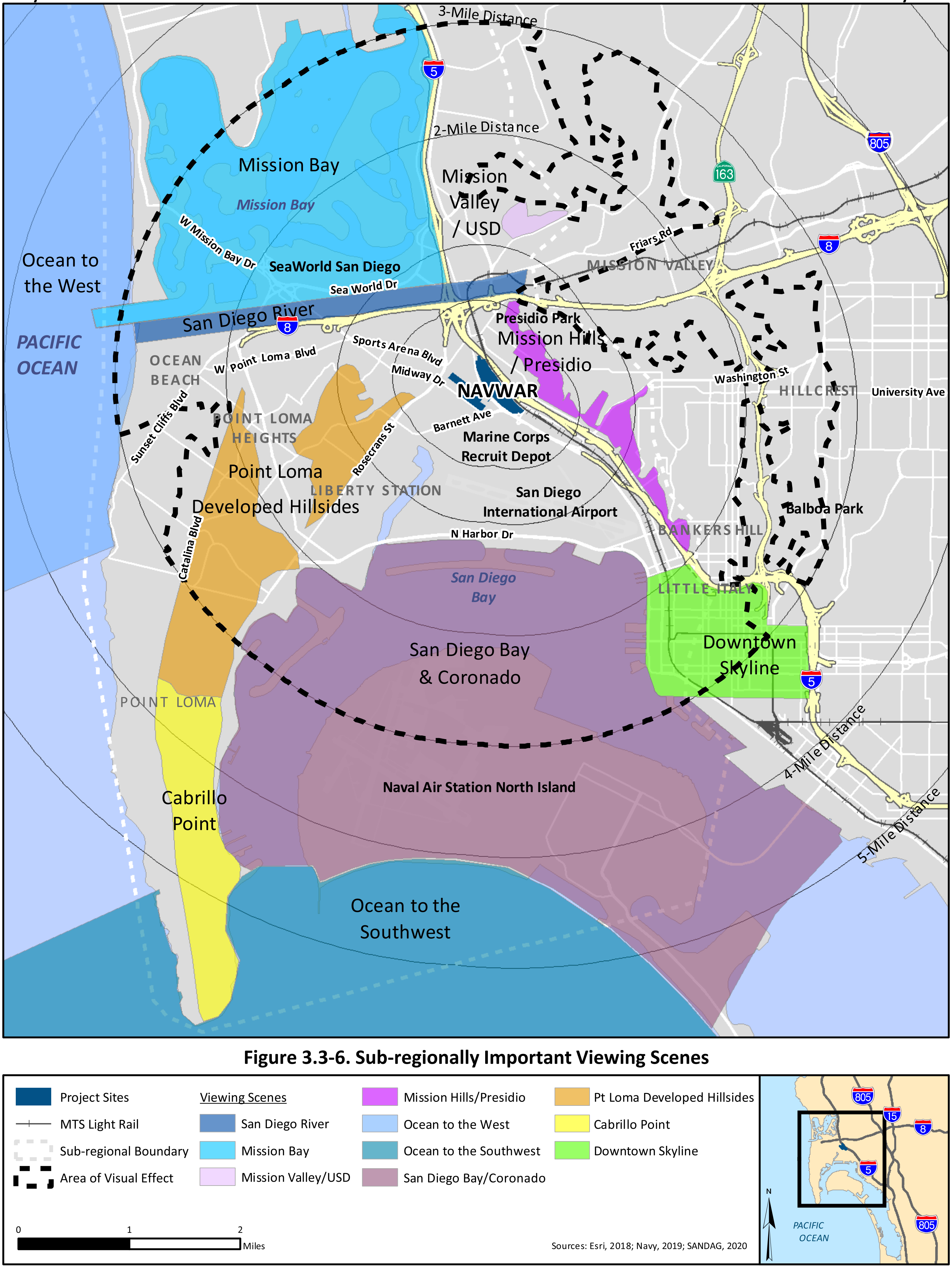


Figure 3.3-6. Sub-regionally Important Viewing Scenes

Visual Quality Composite

The visual quality composite score is an averaging of the individual components of vividness, unity, and intactness.

As shown in Figure 3.3-7, the composite quality ranking has been used to categorize each of the LAUs. The rankings include low, moderate low, Moderate, moderate high and high. Although there are objective reasons why these areas have been ranked as shown on the map, a level of subjectivity remains. This subjectivity is acceptable, however, since there would not be a consistent reaction from the public that is only based on objective reasons. The subjectivity is generally introduced as part of the likely impression or reaction that viewer groups are expected to have.

Scenic Highways

The Department of Transportation manages the State Scenic Highway Program, provides guidance, and assists local government agencies, community organizations, and citizens with the process to officially designate scenic highways. If a highway is listed as eligible for official designation, it is also part of the Scenic Highway System and care must be taken to preserve its eligible status. The Interstate 5 highway corridor is part of the California Scenic Highway System and is eligible for designation as an Official Scenic Highway.

Interstate 5 from downtown San Diego to Orange County is listed in California state law as eligible for designation as a State Scenic Highway, although it has not yet been nominated nor designated. If Interstate 5 is officially designated a State Scenic Highway, then memorable natural landscape views from the highway right-of-way would be protected by local ordinances from visually intrusive development. Interstate 8 from Sunset Cliffs Boulevard to State Route 98 is also considered to be eligible for scenic designation. Figure 3.3-8 shows local eligible and designated scenic highways and roadways.

City of San Diego Scenic Route

The City of San Diego maintains signage that designates scenic routes throughout the city to afford scenic views of the community, as well as to link points of visitor interest. This route does not have any official designation or protection. One route in the AVE, Presidio Drive, is marked by City of San Diego Scenic Route signage.

The part of this route within the AVE begins at the bottom of Presidio Park at Jackson Street and continues up the hill through Presidio Park until it intersects with Arista Street, where the street passes out of the viewshed. There City of San Diego has no specific guiding policies or development restrictions published related to the City-marked scenic routes.

Shade and Shadow

The existing large warehouse buildings have relatively short heights at 47 feet tall and cast a maximum shadow length of 151 feet on December 21st at 9:00 a.m. as shown in Table 3.3-4 and in Figure 3.3-8. Most of the shadows are contained within OTC or fall onto the adjacent rail and transportation corridors. The only sensitive receptor within 151 feet of an existing building is the Veteran's Village to the south of OTC. Since shadows in San Diego are cast to the west, north, and east of objects, they would not impact the outdoor spaces along the northern portion of the Veteran's Village. Other potential sensitive receptors in the immediate vicinity of OTC are shown in Figure 3.3-9.

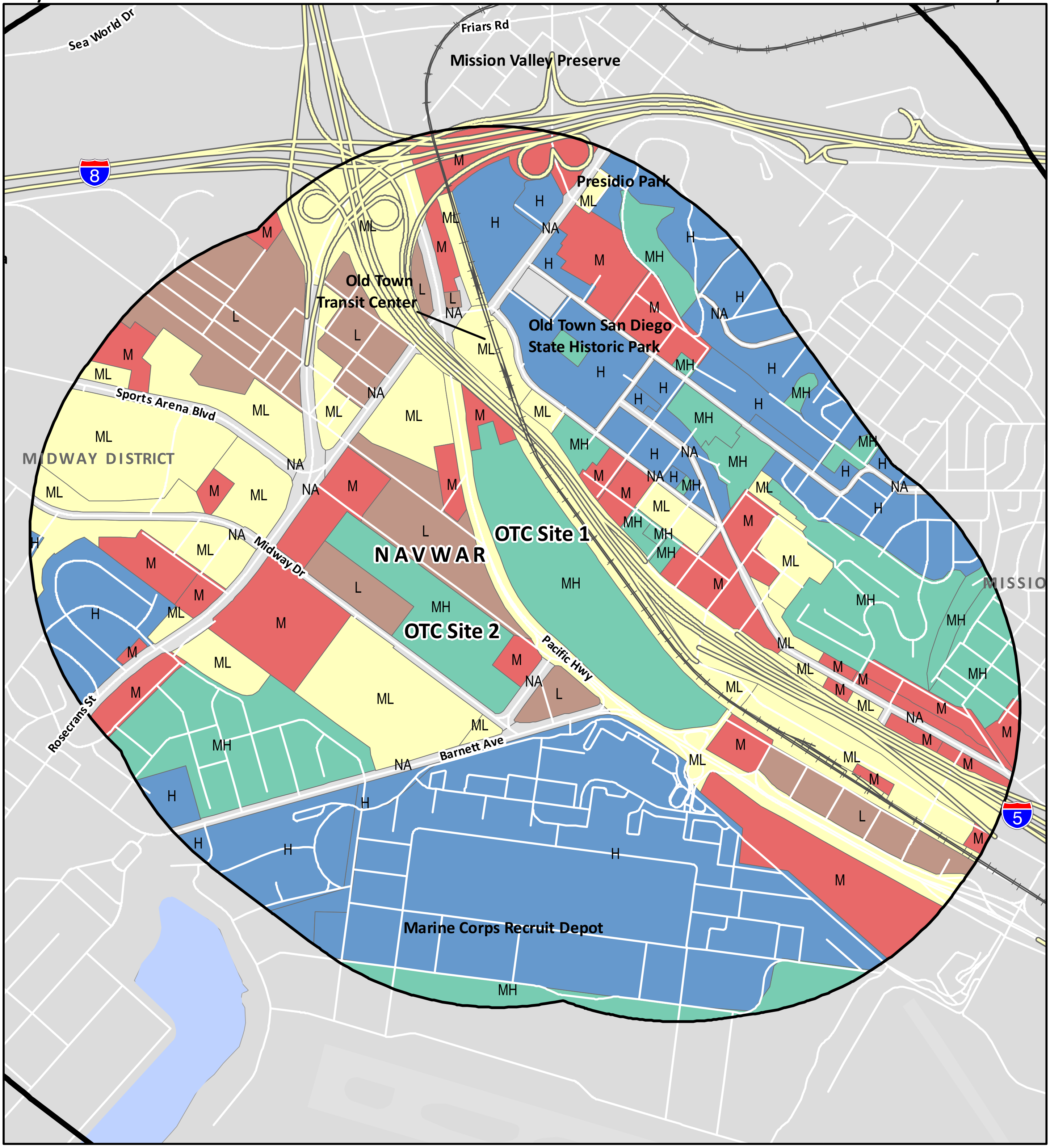
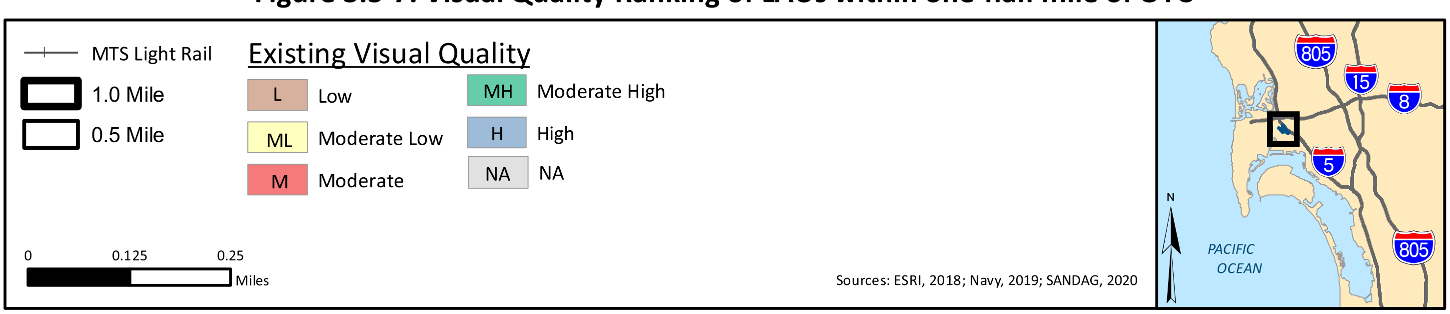


Figure 3.3-7. Visual Quality Ranking of LAUs within one-half mile of OTC



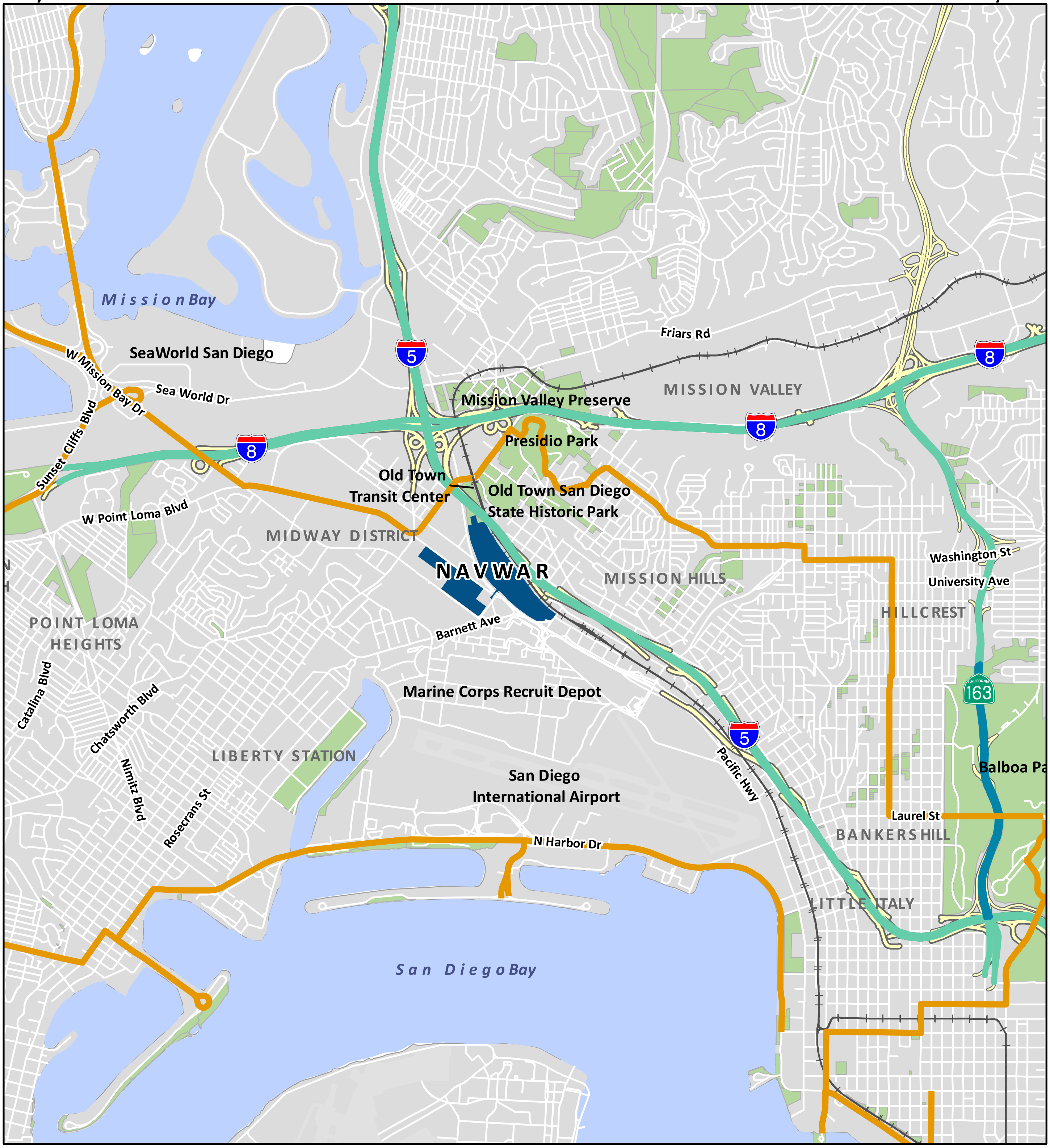
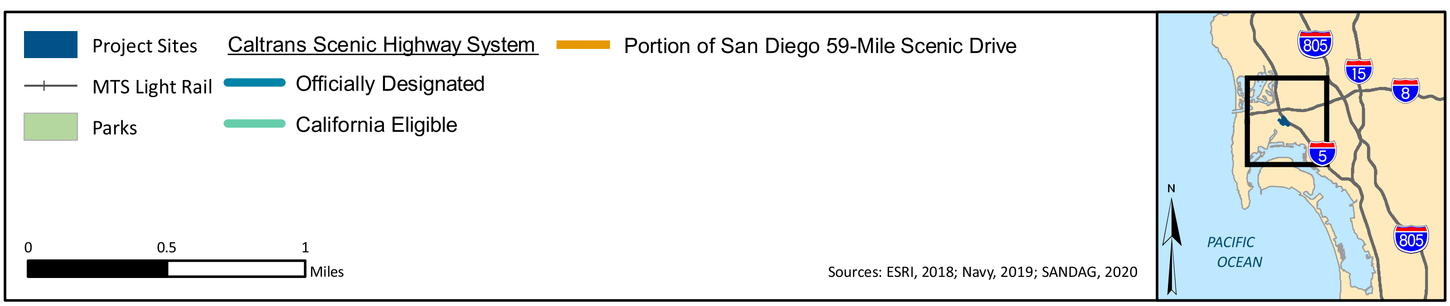


Figure 3.3-8. Eligible Scenic Highways



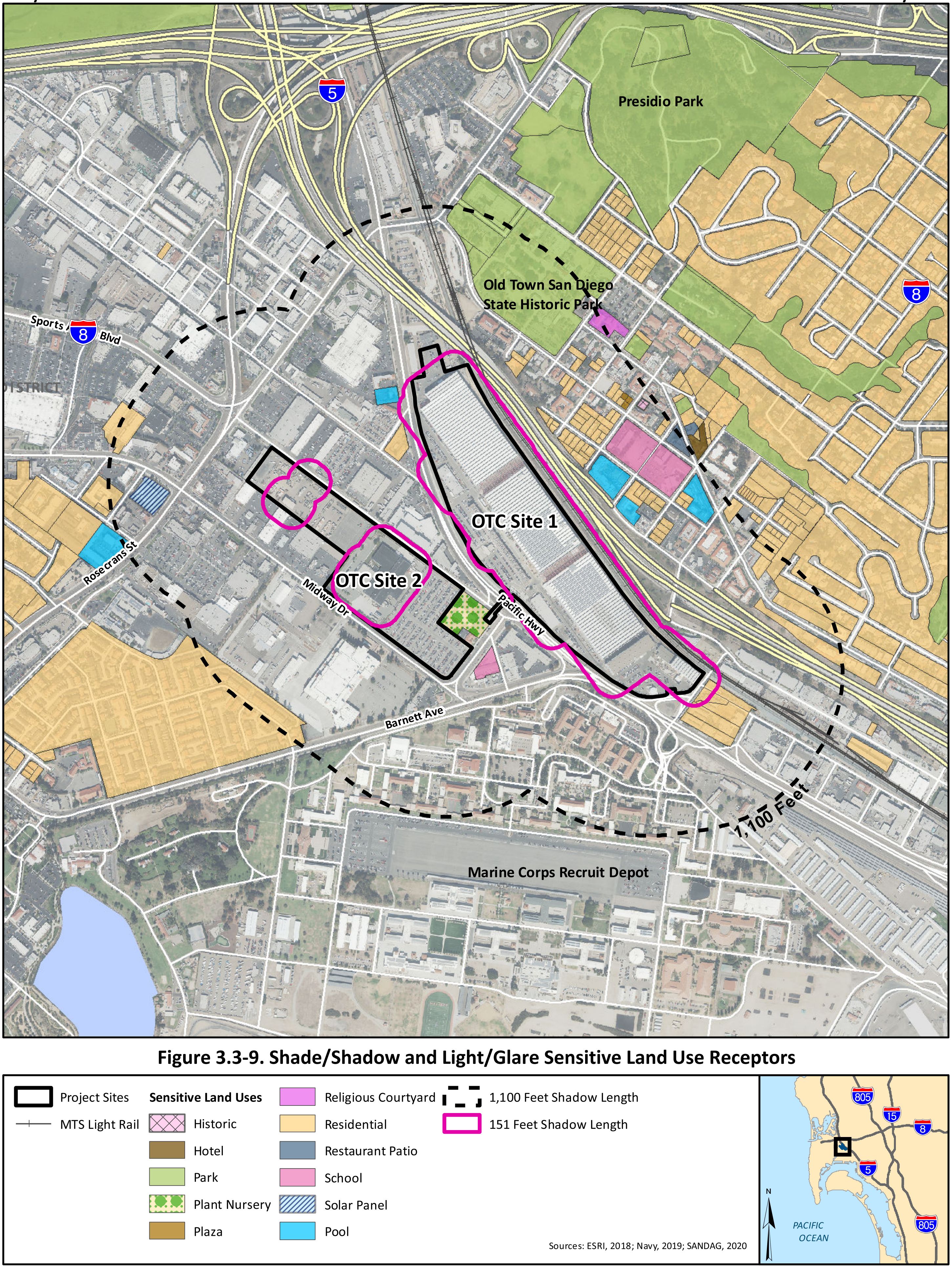


Figure 3.3-9. Shade/Shadow and Light/Glare Sensitive Land Use Receptors

Table 3.3-4 Shadow Lengths for Existing OTC Buildings

Time of Day	*Shadow Length June 20th*	*Shadow Length December 21st*
9:00	44	151
10:00	28	100
11:00	16	80
Noon	9	73
1:00	12	77
2:00	23	92
3:00	37	130
4:00	57	-
5:00	91	-

Legend: - = no data for this cell.

Light and Glare

Sensitive receptors to light and glare are the same as presented for shade and shadow and can be seen in Figure 3.3-9. Existing sources of light include streetlights along roadways within or adjacent to OTC, lights in parking lots, lights along walkways, and lights on the exteriors of buildings. Considering the size of both OTC Site 1 and OTC Site 2, a lower-than-normal amount of night lighting exists.

The warehouse buildings have had the skylights painted and the window system blacked-out for security reasons. Parking and its associated lighting on the east side of the three warehouse buildings is minimal. The west side of OTC Site 1 has extensive surface parking with limited lighting. The pedestrian bridge and adjacent Pacific Coast Highway have regularly spaced light poles, but lighting levels are generally low for an urban area.

OTC Site 2 includes extensive parking lots and few structures. The parking lots have tall light poles spaced widely apart. The existing lighting does not spill outside of the property due to the elevated nature of the freeway that blocks a fair amount of lighting towards the north of the site, with less blockage to the south.

Viewer Groups in the AVE

People respond differently to changes in the physical environment depending on their prior experiences and expectations, their proximity to the views, and the length of time the view is visible to them. Determining a visual impact is considered by many to be highly subjective. For this reason, aesthetics and visual resources are addressed qualitatively rather than just quantitatively.

Viewers are people who have views of the Proposed Action Alternatives. Viewers are usually discussed in terms of general categories of activities (such as residents, workers, pedestrians, or motorists) and are referred to as viewer groups. The perceptions of viewers are influenced by their location, specific activities in which they are engaged, personal degree of awareness and individual values and goals. The following viewers groups exist within the foreground and middle ground surrounding OTC:

1. **Property Owners or Resident Owners.** This viewer type has the greatest investment in the area based on owning property and having a high interest in preserving or increasing property value. Residents, in general, are also the group that is most likely to see the Proposed Action Alternatives over the longest period of a day, week, month, or years.

2. **Renting Resident**. Although the renting resident does not have the same financial investment in the home they are living in, they are still highly interested in a positive experience and enrichment from the positive aspects of the surrounding visual environment.
3. **Freeway Drivers.** Commuters and people making high-speed trips on roadways are generally not interested in what they see from the freeway or highway. However, if they are there as a visitor, a tourist, or if they are in a highly scenic area, they may be much more interested.
4. **General Street Drivers.** Similar to the freeway driver, the activity of driving can dominate the viewers perception of the environment they are traveling through. However, their speeds are generally lower than those on the freeway, so their duration or exposure is slightly greater.
5. **Walkers, Joggers and Cyclists.** For those traveling through an area by active transportation means, the concern over their visual environment is higher than their driving counterparts. This has to do with lower speed, ability to change viewing directions quicker and no barriers from inside a vehicle to obstruct a portion of their views.
6. **Transit Users.** Since transit users do not have their attention on driving, they have more time to see their surrounding visual environment.
7. **Employees.** A person that works in a LAU within the AVE has the potential to become very familiar with an area if they are traveling to, through and working in that LAU. Employees are less likely than many other viewers to care about their visual environment since they self-selected to work in that environment.
8. **Customers.** Individuals that visit businesses in a LAU would have a higher sensitivity and concern with their visual environment than many others in the LAU. If they do not like an area, they are not likely to frequent businesses in that area.
9. **School Attendees.** This group is similar to drivers based on the frequency of visiting a LAU. However, depending on their travel mode, they may pay more attention to the visual setting.
10. **Tourists or Visitors to a LAU.** This group is likely to have a high sensitivity to the visual setting. viewer groups.

Viewer Sensitivity

The degree of existing view exposure (full, partial, limited) to visual resources and the amount of change to the existing visual setting would affect the viewer response. The viewer’s position (foreground, middle ground, background, distant background) relative to the visual resource is also a factor. Foreground and middle ground views are more affected by modest changes than background views. Lastly, the quantities of viewers (less than 10 to more than 50,000) would affect the degree of impact perceived from changes to the visual environment. As shown in Figure 3.3-10, the sensitivity of viewer groups has been composited into an averaged likely viewer response by viewers expected to see the project from a vantage point in the LAU.

Key Observation Points

Ten KOPs were selected for further evaluation via simulations to help identify and demonstrate likely visual effects associated with each action alternative, as well as differences between the alternatives. The KOPs selected for simulations along with other locations considered during the field work data collection process are shown in Figure 3.3-11.

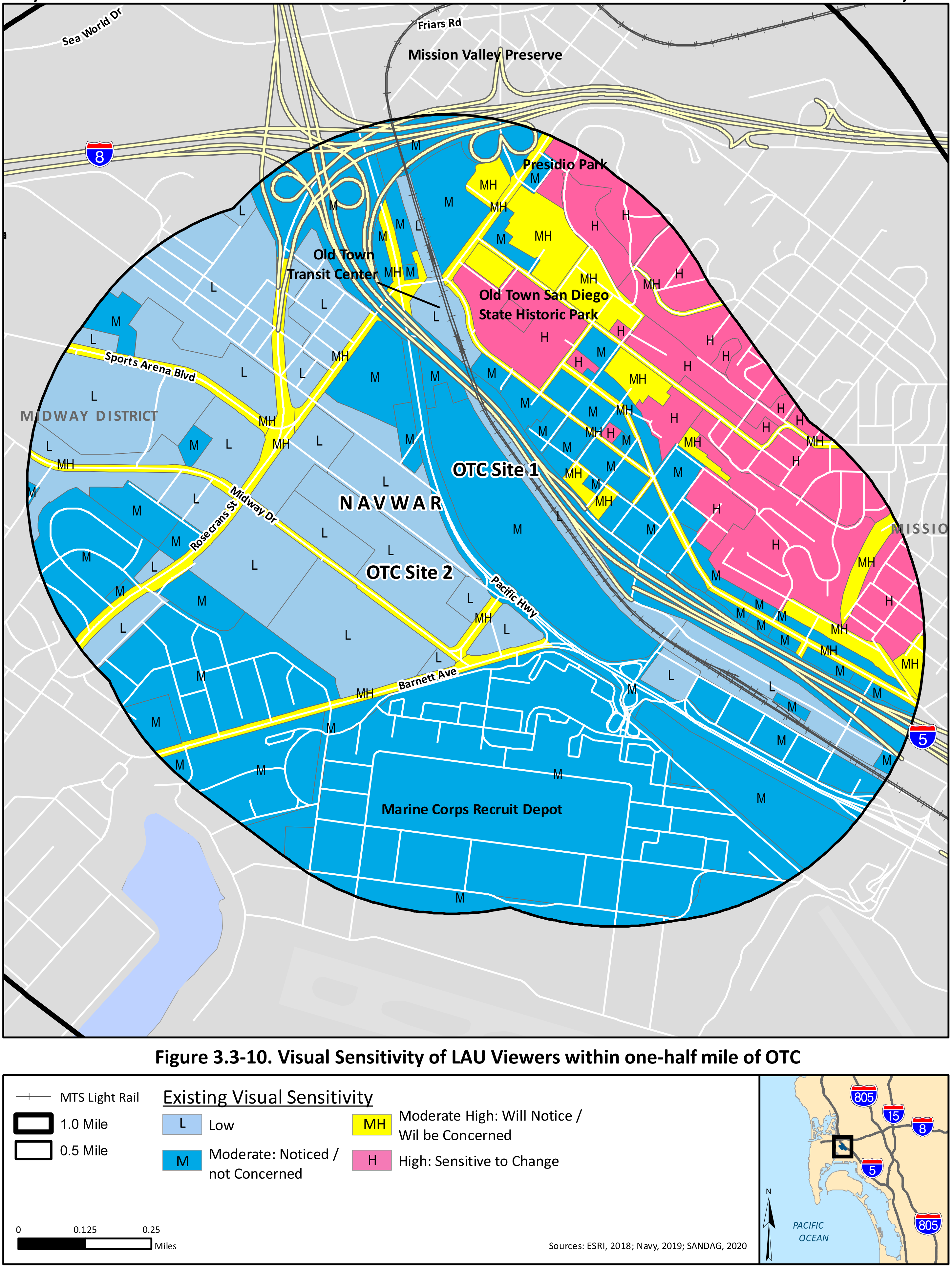


Figure 3.3-10. Visual Sensitivity of LAU Viewers within one-half mile of OTC

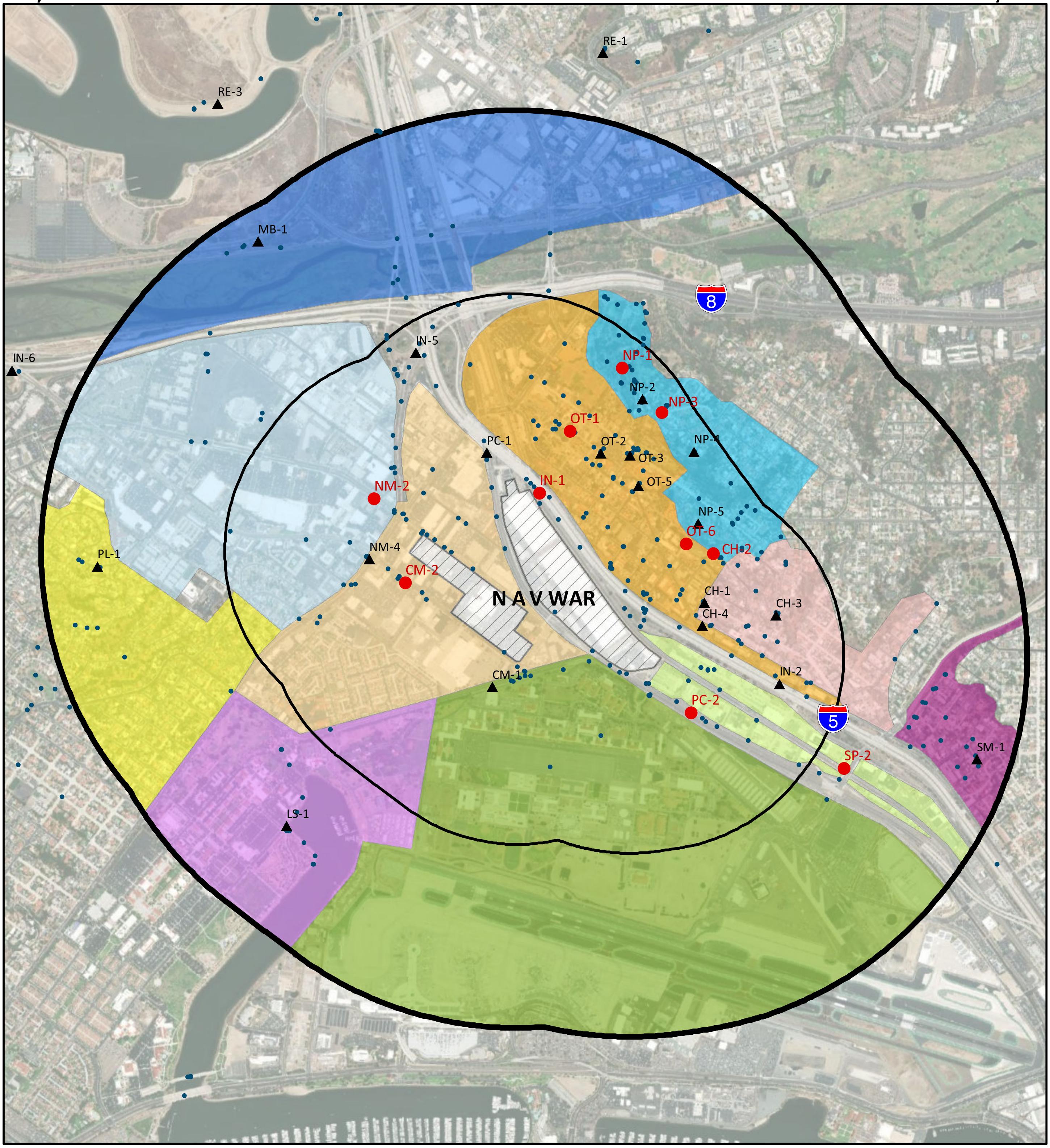
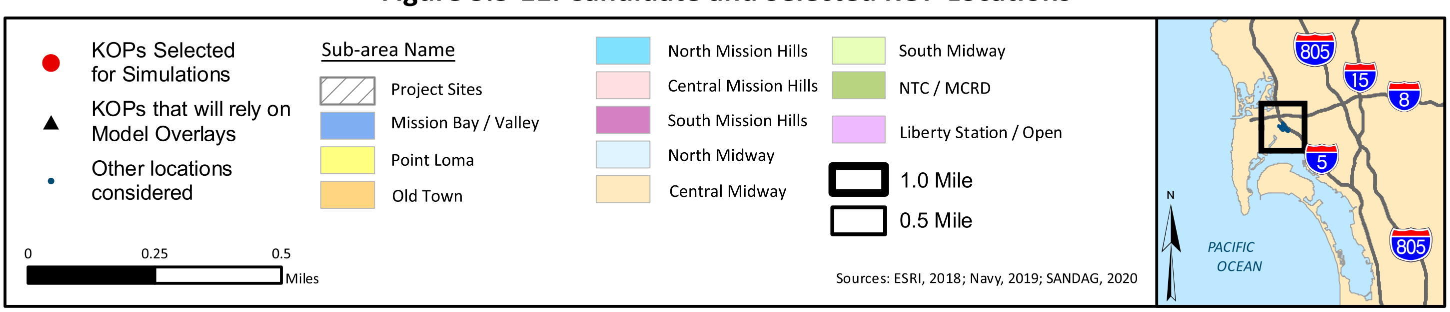


Figure 3.3-11. Candidate and Selected KOP Locations



The KOPs are:

- KOP 1 (IN-1): Interstate 5 corridor southbound
- KOP 2 (PC-2): Pacific Highway northbound
- KOP 3 (NM-2): Sports Arena Boulevard and Rosecrans Street
- KOP 4 (CM-2): Midway Drive at OTC Site 2
- KOP 5 (SP-2): Trolley station at Washington Street
- KOP 6 (OT-1): Washington Square at Old Town State Park
- KOP 7 (OT-6): Old Town Avenue north of Congress Street
- KOP 8 (NP-1): Presidio Mormon Memorial Park
- KOP 9 (NP-3): Altamirano Way and Presidio Drive
- KOP 10 (CH-2): Hayden Way and Linwood Street

The existing condition photo of each KOP is presented in a photo along with the simulation of the Proposed Action Alternatives in Section 3.3.4.

3.3.4 Environmental Consequences

This section discusses the approach to analysis and applicable significance thresholds, before evaluating the potential environmental consequences associated with each action alternative.

3.3.4.1 Approach to Analysis

The Visual Impact Assessment conducted for this EIS utilized a hybrid approach to analyze effects based in part on the FHWA Visual Impact Assessment for Highway Projects (FHWA, 1988)[9] and the U.S. Forest Service's Scenery Management System (U.S. Forest Service, 1995). Both systems were developed by major federal agencies that invested considerable resources in their creation, testing, and implementation and, as a result, both approaches are robust and heavily relied upon to provide systematic and objective evaluations of visual change. Together, these systems provide methodologies that are reliable and widely accepted for evaluating changes to visual or scenic quality. For more details, see Appendix F.

The evaluation of visual resources in the context of environmental analysis typically addresses the contrast between visible landscape elements. Collectively, these elements comprise the aesthetic environment, or landscape character. The landscape character is compared to the Proposed Action's visual qualities to determine the compatibility or contrast resulting from the buildout and demolition activities associated with the Proposed Action Alternatives.

The approach to evaluating visual resources effects associated with the Proposed Action Alternatives took a qualitative and quantitative evaluation of the existing visual setting and the unique dynamics of the sub-region and determined if any of the alternatives would result in highly noticeable contrasts with the existing setting as seen by the sub-regional viewers. A highly noticeable contrast must also be considered potentially negative in the eyes of the sensitive viewers (represented by various viewer

[9] While FHWA released updated guidance in January 2015, Caltrans it is still evaluating the new FHWA guidance (E. Cox, Caltrans, personal communication, October 15, 2020). Some of the terminology from the 2015 FHWA guidance is included in parentheses where appropriate.

groups). These viewer groups must have substantial exposure to these changes, be of a large enough grouping of viewers, and represent concerned and engaged viewers that are likely to consider the changes to be negative to the visual setting.

The evaluation process relied on the development of accurate and representative visual simulations to determine the level of contrast with the existing setting. Potential impacts are not to be determined from a single viewing location, but through a series of simulations from the 10 KOPs described in Section 3.3.2. Tables ranking the likely reaction from viewer groups present in the AVE for each KOP and alternative are available in Appendix F. However, the totality of the KOP viewing locations are summarized in the impact analysis for each action alternative presented in the following sections to determine an overall impact for each Proposed Action.

While the specific details for the site layout and building design are not currently known, the simulations consider a representative development of a certain mass and scale under each action alternative. The following assumptions were used to define the visual components of the Proposed Action Alternatives for this impact analysis:

- Based on the investment required by this project, it is assumed that project designs would represent the industry standard for design aesthetics and architectural quality.
- The proposed buildings are likely to be a combination of concrete, steel, composite architectural materials, and various types and colors of glass.
- Given the potential views that would be available from the proposed new buildings, it is likely that the buildings would utilize a substantial amount of glass and potentially provide balcony areas to take advantage of these views.
- It is anticipated that most of the proposed buildings would include architectural forms that are interesting and iconic and would not likely have flat roofs, or monotonous elevations or fenestration of building design elements.
- Building utilities, storage areas, delivery locations, and other functional elements of a complex of buildings are assumed to be appropriately screened and enclosed.
- Parking structures are assumed to include some level of architectural design and screening. Concrete only materials are not assumed in the modeling. Views into the proposed structure are assumed to not be available as a basic assumption and design condition of approval.
- Construction staging, storage and surge areas would be expected to be distributed throughout OTC Site 1 and OTC Site 2. All existing buildings that will be demolished, would likely have surge piles of demolished material sitting for several months.
- Construction on a typical tall building will likely last from 1-2 years per building and likely up to 5 years for a phase of project Alternatives 2, 3, 4, and 5. Typically, any change to an area that remains beyond five years is not considered to be temporary. Although the overall project phasing could take up to 30 years, individual phases are assumed to be less than 5 years.
- Construction materials are commonly stored in a haphazard and cluttered manner. This analysis assumes that unless required, construction activities and areas are likely to create a negative aesthetic for different areas surrounding OTC Site 1 and OTC Site 2.

For each alternative, a brief description of project-related visually prominent elements is followed by a presentation of the KOP simulations, viewshed analysis of the sub-regionally important viewing scenes, an analysis of view quality, visual quality, aesthetics, obstruction of views, shade and shadow, and light and glare. Each of these components feed into the overall impact conclusion and identification of management practices, as described in Section 3.3.4.8.

Visually Prominent Elements of the Proposed Action Alternatives

A large project with tall buildings or high densities, such as some of the Proposed Action Alternatives, would have a large variety of visually prominent elements that have the potential to be seen by many viewers. The intent of identifying visually prominent elements is to determine what, where, and how these elements are going to be seen by potential viewers. The assessment in this EIS, as detailed in Appendix F, identifies major changes that the Proposed Action Alternatives would have on the visual environment, if these changes would contrast with the existing setting, and would the contrast likely be considered negative (or positive) by the many viewers in the AVE. The analysis considers the large-scale, worst case (or best case) physical elements that are likely to dominate the visibility of the Proposed Action Alternatives. The major elements include the following:

- building heights and widths that contribute to a large mass of structure
- building materials consisting of vertical planes that would dominate the viewing scene, especially with contrasts to the scale, color, materials, or reflectivity of what is common on or near the project site
- major flat surfaces (over 10,000 square feet) that would be easily seen from the elevated viewing locations found around the site
- secondary structures including bridges, parking structures or raised platforms or decks
- vertical elements related to solid fencing, screening, or retaining walls
- landscape treatments that are mostly focused on larger mature trees (since size and percentage of the viewing scene needs to be large enough to be seen)

The primary intent of the simulations presented in this analysis is to provide tools to evaluate how the existing view quality and visual quality are likely to be affected by the physical changes associated with the Proposed Action Alternatives. Each simulation set is used to evaluate the existing visual quality (as determined by the existing visual organization) and how it is ranked by its vividness (how memorable the image is), its unity (how well the visual composition contributes to a well-organized and dynamic viewing scene) and its intactness and appearance (how well is the condition and cohesion of the visual environment put together and maintained). A ranking of potential changes of the visual quality (either made better or worse) was than performed based on the level of change represented by the simulation of the alternative (see Appendix F).

View Blockage

Generally, a project that blocks 10-15 percent or more of a viewing cone would be considered to have an impact. Based on the human eye having binocular vision within a viewing cone of 45 degrees, a 10-15 percent blockage equates to 9 to 13.5 degrees of blockage.

With numerous sub-regionally important viewing scenes to evaluate, composite viewshed analyses were conducted by integrating the Proposed Actions' building massing models. The viewshed results for each scene were then compared to the existing conditions.

The resulting figures represent how each action alternative's building massing would interrupt the viewing corridor given an area identified as the viewing location and the area identified as the viewing scene. The figures show the limits of the outer edge of the corridor affected by potential blockage. The associated tables show the number of acres potentially affected and the population potentially affected. This method is the best way to quantify the overall effect of the potential blockage on both the area as well as the population potentially affected.

Contrast with Setting

Contrast with the existing visual setting is the foundation for noticing change in the visual environment. There are many physical elements that compete for a viewer's attention. The amount of visual data often represents an overload for cognitive processing. As a result of this challenge, the human brain tends to notice the extremes and commit to memory only a part of what it processes. A contrast with a setting does not need to be a negative contrast. Positive elements that help to make the visual environment more legible and aesthetically pleasing are noticed when put in a setting that is disorganized and has a dominant negative aesthetic. Contrast means that the change is noticed.

Contrasts with a setting can best be determined by the following:

- The basic color and texture of the Proposed Action Alternatives elements would be in contrast with the dominant color and texture of the visual setting.
- The balance between natural open space and the built environment would be shifted with the addition of visual elements in the setting.
- Natural resources and natural elements within a space would be replaced by project elements that would be highly noticeable.
- Proposed landforms would be very different than existing landforms and the Proposed Action Alternatives grading is such that it would cut into or disrupt natural lines, shapes, and massing of dominant landforms in the area.
- The massing and scale of project elements would be dramatically different than the visual setting.
- The compositional organization of a viewing scene that is well structured, balanced, scaled to humans, and with repeating patterns and geometric arrangements would have new elements added that would disrupt this dominant pattern.
- The visual organization and structure that recognizes vistas, viewing corridors, landmarks, districts, nodes, and well-defined edges between districts would be obstructed or made less clear by the Proposed Action Alternatives elements.
- The community character of scale, patterned land use, dominant building materials, architectural themes, landscape architectural treatments, and positive and interesting visual elements would not be recognized by the proposed visual elements of the project.
- For areas that have a positive visual quality and positive aesthetic treatments, the proposed elements would introduce a level of negative aesthetic that would be different enough to be noticed.
- It is also possible for a project to positively contrast with a dominant negative visual or chaotic appearance by adding positive visual quality improvements and aesthetics.

Factors used to Determine a Negative Contrast

The objective nature of assessing visual quality and aesthetics effects can become more subjective when predicting how viewer groups would likely process and perceive changes. Although there is common definition of aesthetics, personal backgrounds, values, and tastes can cause a wide shift in perception.

Generally, a contrast would be negative if the following conditions are clearly evident:

- An organized visual environment exists, and the project elements would add a chaotically arranged addition to this organized environment.
- A naturally appearing environment would be replaced with a dominating man-made environment that ignores the natural setting and/or removes a significant part of the existing natural elements.
- Project-related grading would result in abrupt, angular, flat, or vertical geometric forms that would work in opposition to the dominant natural and curvilinear landforms of the area.
- A human-scaled environment where physical elements no longer relate to pedestrian scale and where massing and height would be dramatically changed by the Proposed Action Alternatives. However, landmark elements that contrast with the dominant scale could be part of a positive change in an area.
- An interruption of existing organized patterns of site planning and community arrangement that have dominant landmarks, axial vistas that lead to landmarks or nodes, and that have clarity in the patterning of land uses, districts, and other gathering areas.

Appendix F contains the full detailed analysis for each KOP relative to sub-regionally important viewing scenes visible, degree of potential viewing scene blockage, LAUs visible the existing visual quality and viewer sensitivity, as well as the change in visual quality and likely viewer response to the proposed conditions associated with each Alternative. The information is re-organized and summarized by alternative within this section.

Shade and Shadow

The winter (December 21st) and summer (June 20th) solstices were used to determine maximum shadow lengths. To determine an appropriate assessment area, the maximum building height associated with each of the proposed alternatives was used to calculate potential shadow lengths during the winter (October-April 9a.m.-3p.m.) and summer (April-October 9a.m.-5p.m.) analysis periods. Sensitive receptors that experience a 3-hour cumulative shade time for winter and the 4-hour cumulative shade time for summer are considered to have an adverse impact.

Light and Glare

The light and glare analysis qualitatively considered the potential sources of nighttime light and daytime glare, but modeling was not performed as the specific locations of lighting elements and building materials are not currently known.

Federal Guidance on Significance Thresholds

Significance thresholds are used to determine whether a project may have a significant environmental effect or what level of adversity or benefit the project may bring. NEPA requires federal agencies to determine if an undertaking would significantly affect the environment; however, NEPA does not include specific significance thresholds. According to the CEQ regulations for implementing NEPA, the determination of significance under NEPA is based on context and intensity.

Context relates to the various levels of society where impacts could result, such as society as a whole, the affected region, the affected interests, and the locality. The intensity of an impact relates to several factors, including the degree to which the impact would affect public health and safety; the proximity of the project to sensitive resources; and the degree to which effects on the quality of the human environment are likely to be highly controversial or involve unique or unknown risks. Under NEPA, the context and intensity of a project's impacts are discussed regardless of any threshold's levels, and mitigation measures are included where reasonable.

Factors considered in evaluating the effects of an alternative on visual resources include:

- The extent to which the views from the 10 KOPs would change for their respective viewer groups.
- The degree to which the 10 sub-regionally important viewing scenes would be obstructed by the Proposed Action Alternatives.
- The degree to which view blockage as a result of the Proposed Action Alternatives impacts overall view quality.
- The degree to which the visual quality of the area would be affected by the Proposed Action Alternatives.

Aesthetics

- The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished.
- The amount of natural open space to be graded or developed.
- The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.
- The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image.
- The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements.
- The degree to which the project would contribute to the area's aesthetic value.
- Applicable guidelines and regulations.

Obstruction of Views

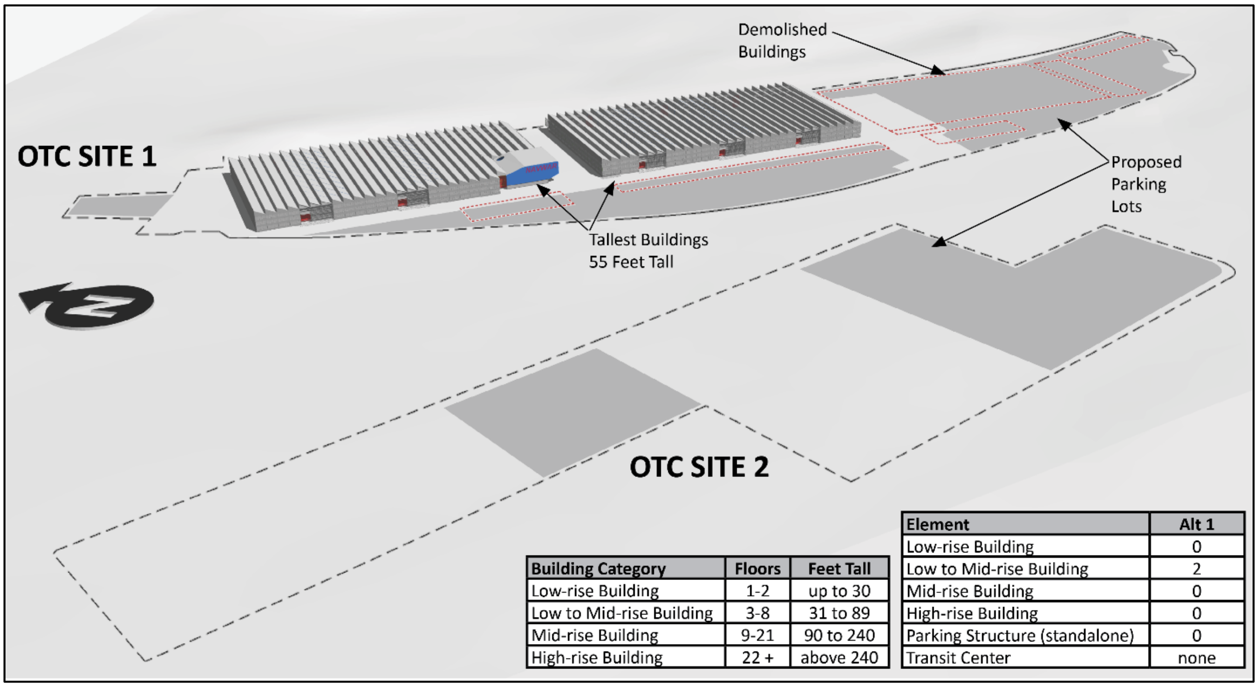
- The nature and quality of recognized or valued views (such as natural topography, settings, man-made or natural features of visual interest, and resources such as mountains or the ocean).
- Whether the project affects views from a designated scenic highway, corridor, or parkway.
- The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).
- The extent to which the project affects recognized views available from a length of a public roadway, bike path or trail, as opposed to a single, fixed vantage point.
- The extent to impacts from shade and shadow and light and glare are also analyzed.

3.3.4.2 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur and there would be no change to visual resources. Therefore, no impacts would occur with implementation of the No Action Alternative.

3.3.4.3 Alternative 1: NAVWAR-Only Redevelopment

Figure 3.3-12 represents a 3D model of possible massing that would accommodate the program needs of this alternative. This diagram is not intended to show an actual architectural design or to commit to any massing arrangement of these buildings other than indicating the general height, number of floors, and parking structures that represent the requirements of the alternative. The diagrams and simulations for this alternative are intended to show how the proposed buildings might typically look, but a final architectural design may be highly variable. The table in Figure 3.3-12 provides a quantitative summary of the major physical features that would be provided by Alternative 1, including floors, heights, and number of total buildings being considered.



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

Element	Alt 1
Low-rise Building	0
Low to Mid-rise Building	2
Mid-rise Building	0
High-rise Building	0
Parking Structure (standalone)	0
Transit Center	none

Figure 3.3-12 General Building Massing of Alternative 1

Compared to the other Proposed Action Alternatives, Alternative 1 structures would be lowest in overall height and would represent no change in structure height and massing on the project site. Although one of the major building elements (the warehouse Building 1) would be eliminated and certain design treatments would be added to update the look and character of the building complex, Alternative 1 would not vary highly with existing conditions. The overall height would not change. The two buildings that would remain on OTC would be updated with materials, finishes, and a strong iconic central building entrance and plaza area. No changes would occur to OTC Site 2, and all buildings and parking lots would remain.

Based on the demolition of several existing buildings and only the primary entry to the northern building being increased from 47 feet tall to 55 feet tall, most viewers would not be able to see the changes resulting from Alternative 1. KOPs 1, 2, 3, 4, 5, 6, 8, and 9 did not result in visible change and are therefore not presented. Changes to the buildings on OTC Site 1 under Alternative 1 are visible in KOPs 7 and 10, and are presented in Figure 3.3-13 and Figure 3.3-14, respectively. Attachment B to Appendix F displays the existing condition photographs, the simulations for all the alternatives, and provides a composite summary of potential impacts.

Figure 3.3-13 KOP 7 (OT-6) – Existing Conditions (top) Alternative 1 Simulation (bottom)

Figure 3.3-14 KOP 10 (CH-2) – Existing Conditions (top) Alternative 1 Simulation (bottom)

Impact Analysis

During Construction

The scale of Alternative 1 is such that demolition and construction would occur over several years. Contractor laydown areas, staging areas and construction areas will be visible. In addition, construction-related rigging, scaffolding, and mobile construction cranes are also expected to be visible. Given that many viewing locations around the site, are substantially higher than the project site, fencing and screening may not be effective. Therefore, a temporary significant impact to visual quality, community character and aesthetics would be expected.

KOPs Locations and Viewer Groups

Only KOP 7 (OT-6) (see Figure 3.3-13) would experience a change from existing conditions, which would be from the removal of one of the warehouse buildings from the southern portion of OTC Site 1. Four additional KOPs (1, 8, 9, and 10) would have views of the remaining redeveloped buildings on OTC Site 1 (the two remaining warehouse buildings that would be renovated).

For each of the KOPs, potential viewer groups have been identified and ranked as to their likely response to visual changes as described in Appendix F. Since Alternative 1 would redevelop the buildings on OTC Site 1 within their existing locations and structures, and the most southerly of the three large warehouse buildings would be demolished and replaced with surface parking, none of the viewer groups would have any concerns over these changes. Therefore, there would be less than significant impacts related to viewer groups.

Viewing Scenes

Figures A-1 through A-11 in Appendix F Attachment A show the potential view corridor blockage to each of the sub-regionally important viewing scenes. Figure 3.3-15 graphically presents the relative percentage of potential view blockage for each of the scenes. Alternative 1 would change very little from existing conditions. The slightly elevated building entrance (55 feet) on the southwest corner does block a limited portion of San Diego Bay and North Island as shown by the dark areas in the figure. As a whole, Alternative 1 would improve visual access to the scenes.

Table 3.3-5 presents the potential view blockage per view scene in a tabular form and calculates the potential population that would be affected based on SANDAG Master Geographical Reference Areas with associated population estimates for 2016 and 2035.

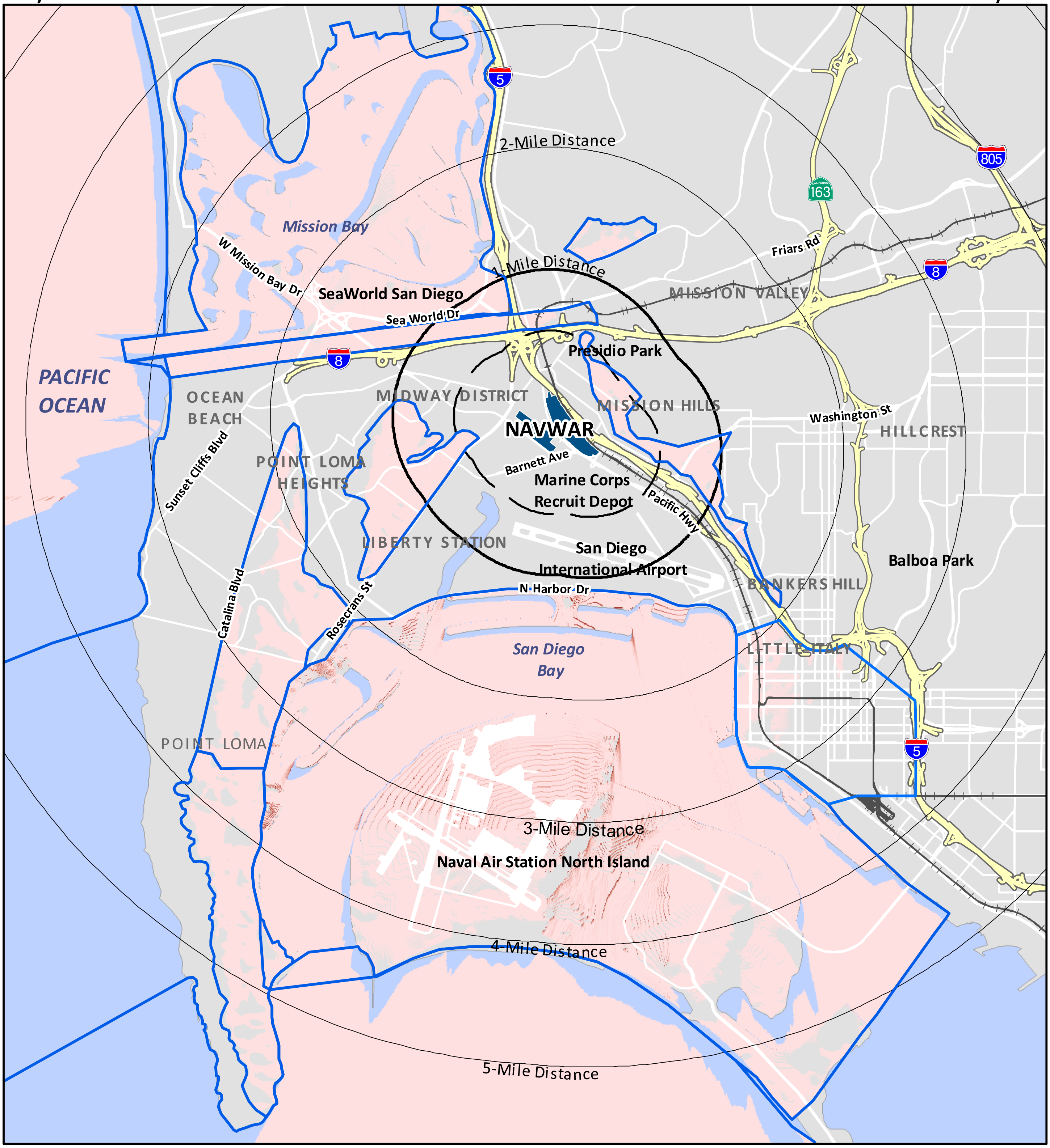


Figure 3.3-15. Alternative 1 Percentage of View Blockage

Project Sites
MTS Light Rail
Sub-Regional Viewing Scenes
Viewing Scene
Percent of View Blockage
No view blockage
Complete view blockage
0 1 2 Miles
Sources: Esri, 2018; Navy, 2019; SANDAG, 2020

Table 3.3-5 Summary of Alternative 1 Viewing Scene Impacts

Viewing Scene(1)	*Percent of Area*	*2016 Pop. In Viewing Location*	*2016 Pop. Potentially Affected (2)*	*2035 Pop. In Viewing Location*	*2035 Pop. Potentially Affected(2)*
1. San Diego River	-7.09%	3,876	-275	3,776	-268
2. Mission Bay	-2.87%	3,876	-111	3,776	-108
3. Mission Valley North	-0.14%	2,143	-3	2,314	-3
4. Presidio/Mission Hills	-0.28%	11,560	-32	13,852	-38
5. Pacific Ocean West	-0.71%	4,220	-30	3,874	-27
6. Pacific Ocean Southwest	-0.23%	2,550	-6	1,994	-5
7. San Diego Bay/Coronado	-3.84%	6,038	-232	6,782	-260
8. Cabrillo	-1.58%	4,927	-78	4,538	-72
9. Point Loma Hillside	-1.90%	9,059	-172	9,162	-174
10. Downtown Skyline	-19.23%	1,158	-223	2,606	-501
Average Percent of View Blocked(1)	-3.79%	24,154(3)	-914	25,528(3)	-966

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

Note(s): (1) Percent of view area effected is based upon a topographic model only and does not include buildings or structures.
(2) Persons affected were based on SANDAG Master Geographical Reference Areas estimates for 2016 and 2035. Calculations assumed even distribution across Master Geographical Reference Areas.
(3) Populations in the various viewing locations overlap. This number has taken out the double counting of persons.

For Alterative 1, the demolition of existing buildings on OTC Site 1 would likely improve the visibility towards the sub-regionally important viewing scenes from the various viewing locations. The range of improvement is estimated to be from 0.14 percent for Mission Valley North up to 19.23 percent for the Downtown Skyline, with an average of 3.79 percent. The total associated 2016 population is estimated to be 914 viewers and the 2035 population would be 966 viewers that could see more of the sub-regional viewing scenes than they can under existing conditions. Given this positive increase in viewing scenes, Alternative 1 would have a beneficial impact on views.

View Quality

Since Alternative 1 focuses on redeveloping two of the existing buildings on OTC Site 1 and does not construct any new buildings, there would be no impact to view quality under Alternative 1.

Visual Quality

Given the small changes proposed to the existing buildings, an improved entrance and plaza area, and the removal of one of the three major structures, the contrast with the existing setting would be too low to have an impact. While analyzing all ten KOPs, 7 is the only one where any change would be noticeable. Alternative 1 would not contrast with the existing visual setting and no viewer groups would likely have concerns. Therefore, Alternative 1 would have no impacts related to contrast with setting.

The LAUs around OTC to the south, west, and north have an overall lower visual quality than LAUs to the east. Therefore, the contrast with the quality of the adjacent areas would not create a significant visual quality impact to these areas. This conclusion is based on the existing visual quality presented in Figure 3.3-7, along with Tables 4.9-1 through 4.9-10 in Appendix F. Therefore, Alternative 1 would be expected to have no impact or a slight increase in visual quality affecting these adjacent areas and on the overall visual environment for this part of the AVE**.** The LAUs around OTC to the northeast, east, and southeast do have a higher visual quality. Since the project would have some improvements that would upgrade and enhance OTC Site 1, it would be expected to increase the visual quality of this area and have a positive impact on the setting. Therefore, Alternative 1 would have a beneficial impact to visual quality.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-7 contains the summary ranking of each of the ten KOPs and summarizes how the changes in visual quality are likely to occur for Alternative 1.

Table 3.3-7 Summary of Alternative 1 Visual Quality Impacts

Key Observation Point	*Existing Average Quality(1)*	*Resulting Predicted Visual Quality(1)*	*Degree of Visual Quality Change*
KOP 1 (IN-1): Interstate 5 Southbound	Moderate	Moderate	No Change
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderately Low	Moderately Low	No Change
KOP 3 (NM-2): Sports Arena and Rosecrans North Midway Sub-Area	Low	Moderate	Moderately Improved Quality
KOP 4 (CM-2): Midway Drive and OTC Site 2 in Central Midway Sub-Area	Low	Moderate High	Major Quality Improvement
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	Moderately High	Moderately High	No Change
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	Moderately High	Moderately High	No Change
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	Moderately High	Moderately High	No Change
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High	High	No Change
KOP 9 (NP-3): Altamirano and Presidio Drive in North Mission Hills Sub-Area	High	High	No Change
KOP 10 (CH-2): Hayden and Linwood in Central Mission Hills Sub-Area	High	High	No Change

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

Under Alternative 1, the historic character of the WWII era fabrication plant would be a moderately low loss of visual resources (see Section 3.6, *Cultural Resources*, for additional detail). Based on the visual simulations and associated tables, there would be no impacts to visual quality.

Aesthetics

- Would the amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community or localized are be removed, altered, or demolished?
  - **Response**: No. There are no dominant community characteristics be found around the south, southwest, west, northwest, and north sides of OTC. The distance to and separation caused by Interstate 5 to the higher quality areas to the northeast, east, and southeast minimizes impact. There scale of development on OTC would remain similar to existing

conditions, with two of the existing warehouse buildings being redeveloped and one being demolished, and improvements being made to the façades, secure access points, and parking areas. Thus, an impact on community character would be less than significant (low) under Alternative 1.

- Would any substantial amount of natural open space be graded or developed?
  - **Response:** No. No open space exists on OTC. No grading of existing landforms is associated with Alternative 1. Therefore, no landform quality impacts would occur.
- Would proposed structures in natural open space areas be effectively integrated into the aesthetics of the site through appropriate design?
  - **Response:** No open space exists on OTC.
- Would a degree of contrast occur between proposed features and existing features that represent the area's valued aesthetic image?
  - **Response:** No. Given the large investment and requirements of the Navy, the aesthetic quality of Alternative 1 would improve over existing conditions. The project would improve the aesthetics of OTC which is considered to currently have only a moderate level of aesthetic quality. Therefore, Alternative 1 would have a beneficial impact to aesthetic quality.
- Would the degree to which a proposed zone change result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements?
  - Response: No.
- Would the degree to which the project contributes to the area's aesthetics, applicable guidelines, or regulations be impacted?
  - **Response:** No. None of the listed goals in the local community plan would be negatively affected by Alternative 1. The project investment, improved quality, and value associated with Alternative 1 would help the community reach some results sought in the adopted Midway-Pacific Highway Community Plan. Therefore, Alternative 1 would have a slight beneficial impact on future community character.

Therefore, Alternative 1 would have no impacts on aesthetics.

Obstruction of Views

- Would an impact to the nature and quality of recognized or valued views occur including features such as topography, man-made or natural features of visual interest, and resources such as mountains or the ocean?
  - **Response:** No. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect views from a scenic highway, corridor, or parkway?
  - **Response:** No. Since no new structures would create view blockages, one of the three major warehouses would be removed, and the visual elements of OTC Site 1 would be upgraded, Alternative 1 would have a beneficial impact on the eligible scenic highway of Interstate 5 and on the locally-designated scenic route.

- Would the extent of a view obstruction (e.g., total blockage, partial interruption, or minor diminishment) block existing views?
    - **Response:** No. a slight improvement in view corridor due to the demolition of the most southerly of the three warehouse buildings.
- Would the project negatively affect recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single or a fixed vantage point?
    - **Response:** No. Refer to viewing scenes and view quality sections above.

Therefore, Alternative 1 would have no impacts related to obstructing views.

Shade and Shadow

Alternative 1 would not create any new buildings. As a result, Alternative 1 would not cast additional shade or shadows on adjacent shadow-sensitive land uses. As such, there would be no impacts from changes to shade and shadow under Alternative 1.

Light and Glare

Alternative 1 would not create any new buildings and would not introduce additional light and glare to adjacent light-sensitive land uses. As such, there would be no impacts from changes to light and glare under Alternative 1.

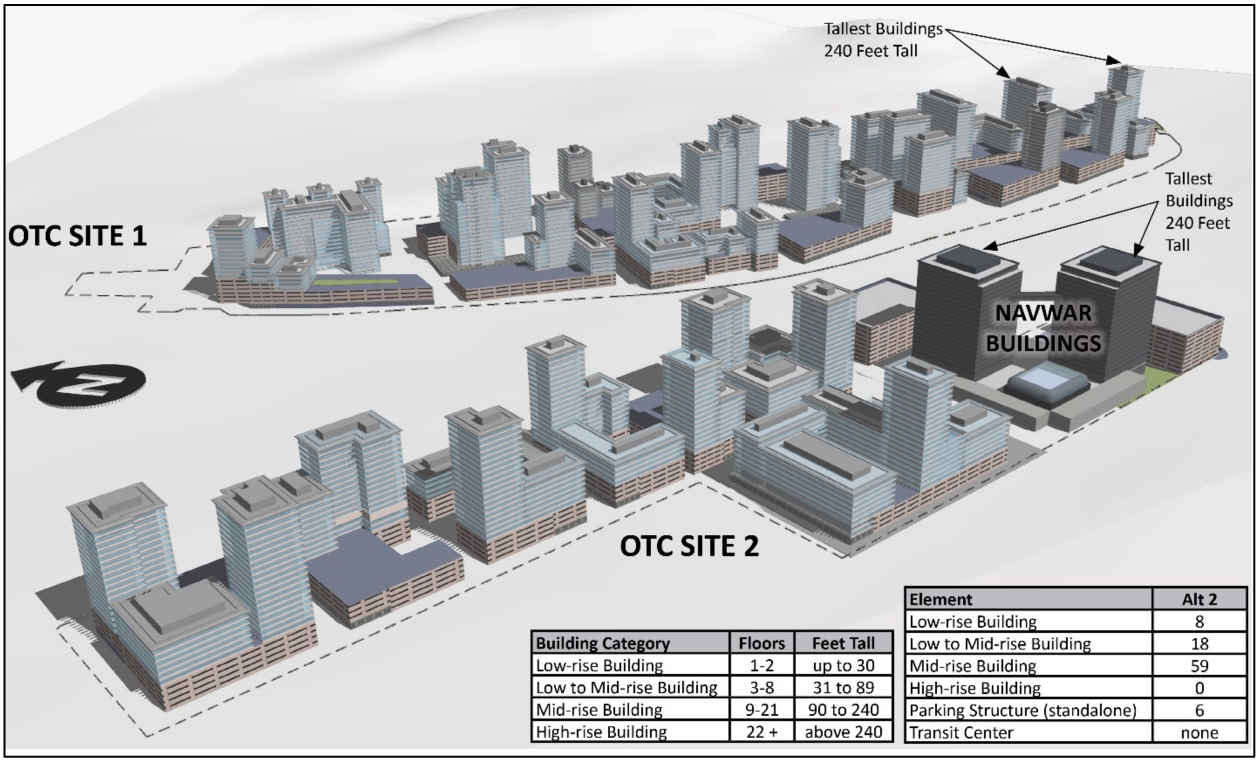
Impact Conclusion

Based on the analysis presented above, Alternative 1 would have less than significant impacts to visual resources.

3.3.4.4 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Figure 3.3-16 represents a 3D model of massing that would accommodate the requirements of Alternative 2. This diagram is not intended to show an actual architectural design or to commit to any massing arrangement of these buildings other than indicating the general height, number of floors, and parking structures needed to represent the requirement of Alternative 2. The diagrams and simulations are intended to show how the proposed buildings might typically look, but a final architectural design may be highly variable. The table in Figure 3.3-1 provides a quantitative summary of the major physical features that would be provided by Alternative 2, including floors, heights, and number of total buildings being considered.

This alternative would include buildings up to 240 feet tall. Major parking lots and structures would be required to support the parking requirements needed for the total gross and net square feet of the proposed building complex. NAVWAR parking requirements would mostly be met by standalone parking structures. Of the 91 buildings shown in Figure 3.3-16, 9 percent would be low-rise buildings that are less than 30 feet in height, 26 percent would be low- to mid-rise buildings ranging from 31 feet to 89 feet in height, and 65 percent would be mid-rise buildings from 90 feet to 240 feet in height. All standalone parking structures are considered low-to mid-rise buildings.



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

Element	Alt 2
Low-rise Building	8
Low to Mid-rise Building	18
Mid-rise Building	59
High-rise Building	0
Parking Structure (standalone)	6
Transit Center	none

Figure 3.3-16 General Building Massing of Alternative 2

Figures 3.3-17 through 3.3-26 show the visual simulations for Alternative 2 from each of the ten KOPs. Attachment B to Appendix F displays the exiting condition photographs, the simulations for all the alternatives, and provides a composite summary of potential impacts.

Impact Analysis

During Construction

The scale of Alternative 2 is such that demolition and construction will occur over several years. Contractor laydown areas, staging areas and construction areas will be visible. In addition, construction-related rigging, scaffolding, and tower construction cranes are also expected to be visible over several years of demolition and construction. Given that many viewing locations around the site, are substantially higher than the project site and the height of the proposed buildings, fencing and screening is not likely to be effective. Therefore, a temporary significant impact to visual quality, community character and aesthetics would be occur.

KOP Locations and Viewer Groups

Alternative 2 would be visible from all 10 KOPs. For each KOP, potential viewer groups have been identified and ranked as to their likely response to visual changes (see Appendix F Table 1-6.1 and Tables 4.9-1 through 4.9-10 with particular attention to the tables associated with KOPs 6, 8, 9, and 10). Alternative 2 would result in significant impacts to viewer groups.

Figure 3.3-17 KOP 1 (IN-1) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-18 KOP 2 (PC-2) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-19 KOP 3 (NM-2) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-20 KOP 4 (CM-2) – Existing Conditions (top) Alternative 2 Simulation (bottom)

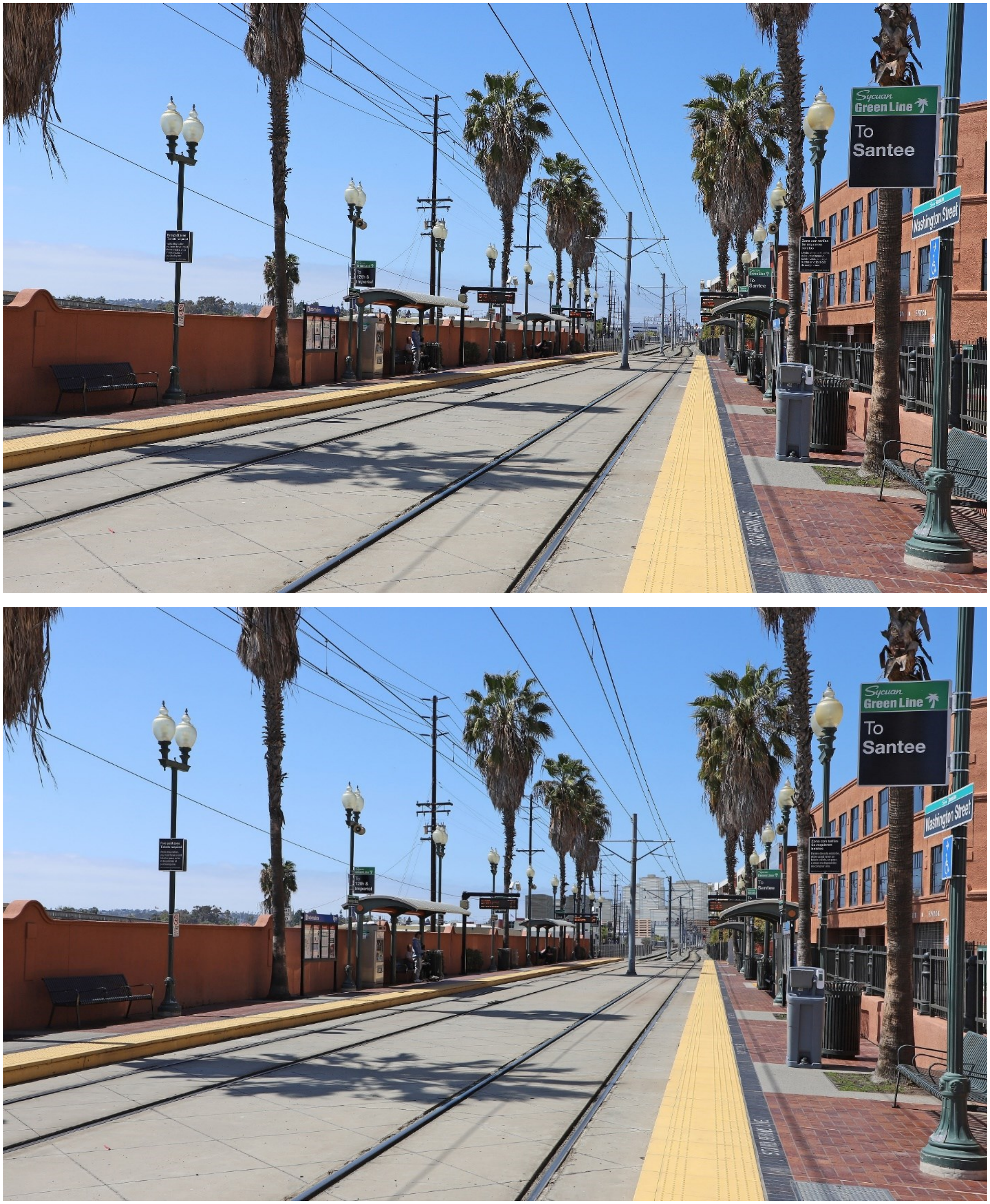


Figure 3.3-21 KOP 5 (SP-2) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-22 KOP 6 (OT-1) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-23 KOP 7 (OT-6) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-24 KOP 8 (NP-1) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-25 KOP 9 (NP-3) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Figure 3.3-26 KOP 10 (CH-2) – Existing Conditions (top) Alternative 2 Simulation (bottom)

Viewing Scenes

Figures A-12 through A-22 in Appendix F Attachment A show the potential view corridor blockage to each of the sub-regionally important viewing scenes. Figure 3.3-27 graphically presents the relative percentage of potential view blockage for each of the scenes. Based on the high percentage of 90- to 240-foot-tall buildings, views across OTC would be partially blocked with more significant blockage occurring towards Mission Bay and the University of San Diego. Table 3.3-8 presents the potential view blockage per view scene in a tabular form and calculates the potential population that would be affected based on SANDAG Master Geographical Reference Areas with associated population estimates for 2016 and 2035. For Alterative 2, the range of area that could potentially be affected is estimated to be from 11.35 percent for the Downtown Skyline up to 57.62 percent for Mission Valley North, with an average of 32.32 percent. The total population who would be able to see less of the sub-regional viewing scenes than under existing conditions is 7,806 viewers (2016) and 8,250 viewers (2035).

Table 3.3-8 Summary of Alternative 2 Viewing Scene Impacts

Viewing Scene[(1)]	*Percent of Area*	*2016 Pop. In Viewing Location*	*2016 Pop. Potentially Affected*[(2)]	*2035 Pop. In Viewing Location*	*2035 Pop. Potentially Affected*[(2)]
1. San Diego River	55.20%	3,876	2,140	3,776	2,084
2. Mission Bay	34.77%	3,876	1,348	3,776	1,313
3. Mission Valley North	57.62%	2,143	1,235	2,314	1,333
4. Presidio/Mission Hills	27.92%	11,560	3,228	13,852	3,868
5. Pacific Ocean West	20.50%	4,220	865	3,874	794
6. Pacific Ocean Southwest	32.02%	2,550	817	1,994	638
7. San Diego Bay/Coronado	32.39%	6,038	1,956	6,782	2,197
8. Cabrillo	15.99%	4,927	788	4,538	726
9. Pt Loma Hillside	35.40%	9,059	3,207	9,162	3,243
10. Downtown Skyline	11.35%	1,158	131	2,606	296
Average Percent of View Blocked[(1)]	32.32%	24,154[(3)]	7,806	25,528[(3)]	8,250

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

Notes: [(1)] Percent of view area effected is based upon a topographic model only and does not include buildings, structures.
[(2)] Persons affected were based on SANDAG Master Geographical Reference Areas estimates for 2016 and 2035. Calculations assumed even distribution across Master Geographical Reference Areas.
[(3)] Populations in the various viewing locations overlap. This number has taken out the double counting of persons.

View Quality

Views in this sub-region are part of the character and value of the neighborhoods within the community. Based on analysis of the viewsheds, of the approximately 72,000 persons living in the AVE, nearly 25,000 residents live in areas where views of the project exist. All the simulations have been taken from public viewing locations.

Both Interstate 8 and Interstate 5 are eligible for scenic designation. There are also portions of a designated 59-mile scenic route that passes through the AVE.

Table 3.3-8 presents how Alternative 2 would affect viewing scenes that are sub-regionally important. Alternative 2 would potentially block from 11 percent to 55 percent of the total views, with special concern for affected views of the San Diego River, Mission Valley North, San Diego Bay, and the Point Loma Hillside. KOPs 3, 4, 5, and 6 are not considered to have adverse impacts associated with Alternative 2.

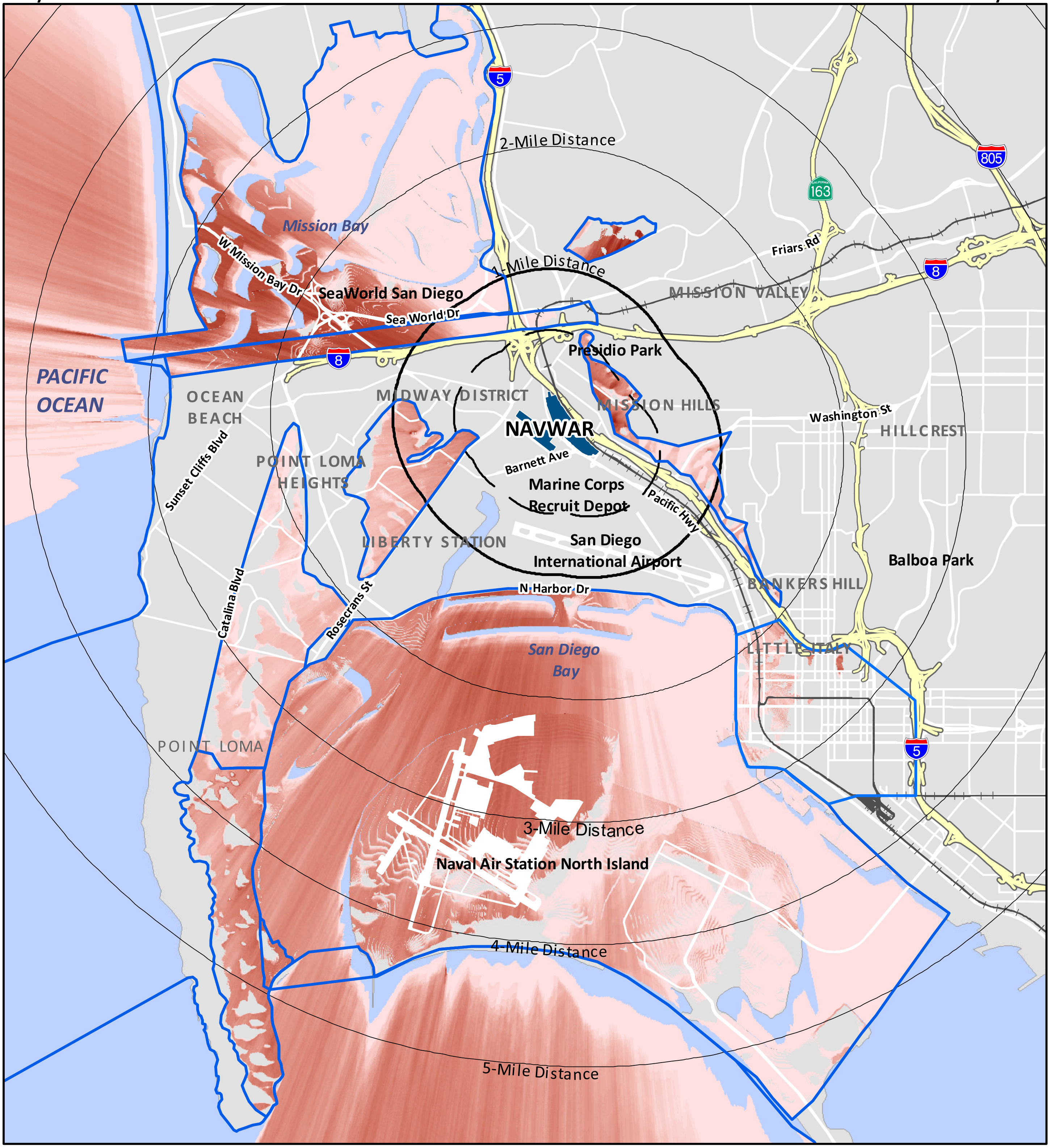
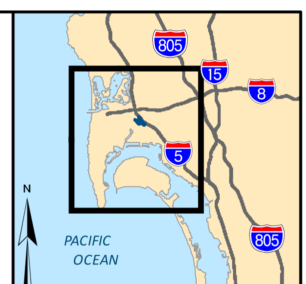


Figure 3.3-27. Alternative 2 Percentage of View Blockage

Project Sites
MTS Light Rail
Sub-Regional Viewing Scenes
Viewing Scene
Percent of View Blockage
No view blockage
Complete view blockage

0 1 2 Miles

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020



Of the ten KOPs shown on Table 3.3-9, a moderate and moderately high adversity would occur for KOPs 1, 2, 7, 8, and 10. A high adversity would occur for KOP 9, with views of San Diego Bay, Coronado, Cabrillo Point, and the Point Loma Hillside being affected. Contributing to this level of view impact is the silhouetting of the buildings against the sky. Moderately high and high impacts are considered significant.

Most of the view corridor impacts are from private views, with only three or four public viewing locations from North Mission Hills affected. KOP 8 from Presidio Park is a public viewing location which would experience view blockage. Buildings appear more in scale from this location compared with KOP 10, and ocean views would not be as dramatically affected. Therefore, Alternative 2 would result in a significant impact to view quality.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-9 contains a ranking for each KOP and the changes in view quality under Alternative 2.

Given the range of view blockage but tempered with the fact that the proposed buildings are not as high as Alternatives 4 and 5, Alternative 2 would have a significant (moderately high) impact on viewing scenes resulting from the blockage of view corridors.

Table 3.3-9 Summary of Alternative 2 View Quality Impacts

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

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

Visual Quality

A project may either improve the overall visual quality in an area, or it can be neutral or damaging to an area's visual quality. To have a high or moderately high adverse impact to the visual quality for areas within 0.5 mile of OTC Site 1 or OTC Site 2, Alternative 2 elements would need to demonstrate that they contrast highly with the existing setting. Moderately high and high impacts are considered a significant impact. If an adjacent area has a high visual quality associated with it, and if the project has a lower visual quality, this change in quality of the immediate area would be considered to have an adverse change. From an aesthetics perspective, Alternative 2 would be assumed to be of a moderately high or high level of aesthetics. This assumption is based on the investment levels expected, the assumed positive design efforts, and the rigorous reviews that would likely be required. Given these assumptions, Alternative 2 would have a positive impact on the visual quality of the area. Still, Alternative 2 would contrast with the existing visual setting. Therefore, Alternative 2 would result in a significant impact related to contrast with setting.

Visual quality is determined by the combination of an area's vividness, unity, and intactness. The LAUs around OTC to the south, west, and north have an overall lower visual quality than LAUs to the east. Therefore, the contrast with the quality of the adjacent areas would not create a significant visual quality impact to these areas. This conclusion is based on the visual quality rankings presented in Figure 3.3-7, along with Tables 4.9-1 through 4.9-10 in Appendix F. The areas to the south, southwest, west, northwest, and north do not have a high visual quality associated with them. Therefore, Alternative 2 would have a positive impact on these adjacent areas and on the overall visual environment for this part of the AVE. The LAUs around OTC to the northeast, east, and southeast do have a higher visual quality. As indicated in the simulations for KOPs 6, 7, 8, 9, and 10 and as shown in Table 3.3-10, Alternative 2 could lower the visual quality of this area. Therefore, Alternative 2 would result in a significant impact to visual quality.

Table 3.3-10 contains the ranking of each of the ten KOPs and summarizes how the changes to visual quality under Alternative 2.

The historic character of the WWII era fabrication plant would be lost due to the demolition of the existing structures on OTC. This would represent a moderately low loss of visual resources (see Section 3.6, *Cultural Resources*, for the cultural resources environmental consequences analysis). Based on the information presented in Table 3.3-10 and as show in the simulations for KOPs 1, 3, and 4, a positive impact would occur for areas south, southwest, west, northwest, and north, of OTC as a result of Alternative 2. Alternative 2 would increase the existing moderate and low visual quality to moderately high and moderate resulting in a slight beneficial impact. As shown in the simulations for KOPs 6 through 10, impacts to the visual quality of the areas to the northeast, east, and southeast of OTC would be less than significant (moderate) under Alternative 2.

Table 3.3-10 Summary of Alternative 2 Visual Quality Impacts

Key Observation Point	*Existing Average Quality(1)*	*Resulting Predicted Visual Quality(1)*	*Degree of Visual Quality Change*
KOP 1 (IN-1): Interstate 5 Southbound	Moderate	Moderately High	Slightly Improved Quality
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderately Low	Moderately Low	No Change
KOP 3 (NM-2): Sports Arena and Rosecrans North Midway Sub-Area	Low	Moderately Low	Slightly Improved Quality
KOP 4 (CM-2): Midway Drive and OTC Site 2 in Central Midway Sub-Area	Low	Moderate	Moderately Improved Quality
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	Moderately High	Moderately High	No Change
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	Moderately High	Low	Major Lowered Quality
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	Moderately High	Moderate	Slightly Lowered Quality
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 9 (NP-3): Altamirano and Presidio Drive in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 10 (CH-2): Hayden and Linwood in Central Mission Hills Sub-Area	High	Moderate	Moderately Lowered Quality

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

Aesthetics

- Would the amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, be removed, altered, or demolished?
    - **Response:** No. There are no dominant community characteristics to be found around the south, southwest, west, northwest, and north sides of OTC. Additionally, the freeway separates OTC from the sub-areas to the northeast, east, and southeast that do have existing community character, which limits the effect changes at OTC would have on those communities. Therefore, there would be a less than significant (moderately low) impact on community character under Alternative 2.
- Would any substantial amount of natural open space be graded or developed?
    - **Response:** No. No grading of existing landforms that are of moderate to high quality would occur. Thus, no landform quality impacts would occur under Alternative 2 from grading or development. Therefore, there would be a less than significant impact to landform quality.
- Would proposed structures in natural open space areas be effectively integrated into the aesthetics of the site through appropriate design?

- **Response:** No open space exists on OTC.

- Would a degree of contrast occur between proposed features and existing features that represent the area's valued aesthetic image?
  - **Response:** Yes. Given the large investment, requirements of the Navy, the level of expectation of the community, as well as the market conditions for the private development portions of the project, a high aesthetic quality would be achieved. Alternative 2 would improve the aesthetics of OTC, which currently has only a moderate level of aesthetic quality. Therefore, there would be a beneficial impact to aesthetic quality under Alternative 2.
- Would the degree to which a proposed zone change results in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements?
  - **Response:** Yes. The height, bulk, and scale would contrast with the existing development in the community. Therefore, there would be significant impacts related to the degree of change under Alternative 2.
- Would the degree to which the project contributes to the area's aesthetics, applicable guidelines, or regulations be impacted?
  - **Response:** Yes. None of the listed goals in the local community plan, other than maintaining view corridors, would be negatively affected by the implementation of Alternative 2. Based on the anticipated design quality associated with the project and with investment in the AVE, the project would likely encourage other development and community improvements that would help the community meet the urban design, aesthetic, community development, and infrastructure goals specified in the Midway-Pacific Highway Community Plan. Alternative 2 would therefore have a beneficial impact on future community character.

Therefore, Alternative 2 would result in less than significant impacts on aesthetics.

Obstruction of Views

- Would an impact to the nature and quality of recognized or valued views occur including features such as topography, man-made or natural features of visual interest, and resources such as mountains or the ocean?
  - **Response:** Yes. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect views from a scenic highway, corridor, or parkway?
  - **Response:** Yes. Portions of Interstate 5 or Interstate 8 are considered as eligible scenic highways. Views along the scenic route would be moderately affected by Alternative 2. Therefore, Alternative 2 would have a less than significant (moderate) impact on eligible scenic highways.
- Would the extent of a view obstruction (e.g., total blockage, partial interruption, or minor diminishment) block existing views?
  - **Response:** Yes. Refer to viewing scenes and view quality sections above.

- Would the project negatively affect recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single or a fixed vantage point?
    - **Response:** Yes. Refer to viewing scenes and view quality sections above.

Therefore, Alternative 2 would result in significant impacts related to the obstruction of views.

Shade and Shadow

The shadow analysis was completed for December 21st and June 20th. The winter solstice results are shown in Figure 4.17-2 and the summer solstice results are shown in Figure 4.17-4 in Appendix F. While shadows are cast over a large area, the duration of those shadows do not exceed the winter (3 or more hours of shade) or summer (4 or more hours of shade) thresholds. During both time frames, only a portion of Walter Anderson nursery exceeds either threshold. The potential shadow effects would be less than significant.

Light and Glare

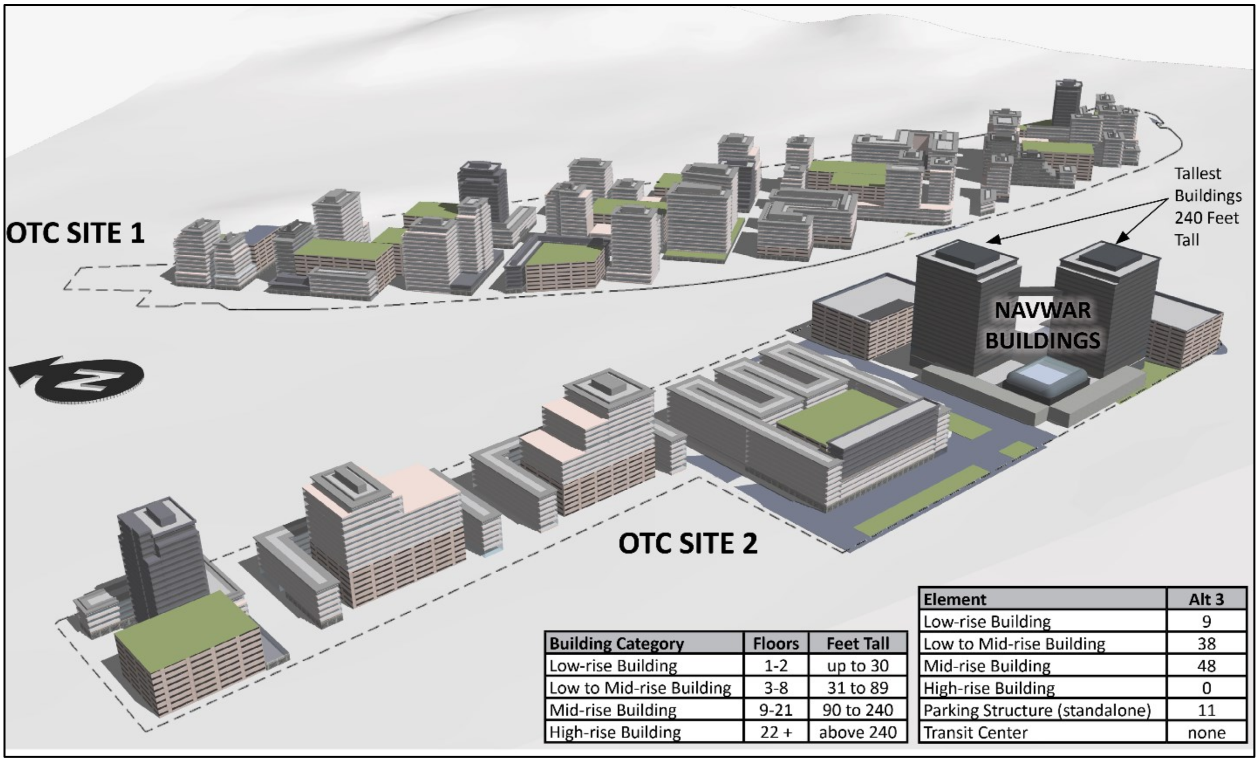
Alternative 2 would likely create conditions that would cause light and glare impacts, but these cannot be fully analyzed until site design and detail is available. However, based on the proposed scale of development under Alternative 2, including the height, size, and position of buildings and their lighting needs, potential building materials (e.g., glass, steel), and types of uses (e.g., hotels that require nighttime lighting), impacts would be presumed to occur. Therefore, Alternative 2 would result in significant impacts related to light and glare.

Impact Conclusion

Based on the analysis presented above, Alternative 2 would have a significant impact to visual resources.

3.3.4.5 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Figure 3.3-28 represents a 3D model of massing that would accommodate the program needs of this alternative. This diagram is not intended to show an actual architectural design or to commit to any massing arrangement of these buildings other than indicating the general height, number of floors, and parking structures needed to represent the requirements of Alternative 3. The diagrams and simulations using this massing are intended to show how the proposed buildings might typically look, but a final architectural design may be highly variable. The table in Figure 3.3-28 provides a quantitative summary of the major physical features that would be provided by Alternative 3, including floors, heights, and number of total buildings being considered.



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

Element	Alt 3
Low-rise Building	9
Low to Mid-rise Building	38
Mid-rise Building	48
High-rise Building	0
Parking Structure (standalone)	11
Transit Center	none

Figure 3.3-28 General Building Massing of Alternative 3

This alternative includes buildings up to 240 feet tall. Major parking lots and structures would be required to support the parking requirements needed for the total gross and net square feet of the building complex. NAVWAR parking requirements would mostly be met by standalone parking. Of the 106 buildings shown in Figure 3.3-27, 9 percent would be low rise below 30 feet, 46 percent would be low-to mid-rise from 31 feet to 89 feet, and 45 percent would be mid-rise from 90 feet to 240 feet. All standalone parking structures are considered low- to mid-rise buildings.

Figures 3.3-29 through 3.3-38 show the visual simulations for Alternative 3 from each of the ten KOPs. Attachment B to Appendix F displays the exiting condition photographs, the simulations for all the alternatives, and provides a composite summary of potential impacts.

Impact Analysis

During Construction

Alternative 3 would have the same types of visual impacts during construction as Alternative 2 but would be slightly less in magnitude due to the shorter building heights and less development being proposed. A temporary significant impact to visual quality, community character and aesthetics would still be expected.

KOP Locations and Viewer Groups

Alternative 3 would be visible from all ten KOPs. For each KOP, potential viewer groups have been identified and ranked as to their likely response to visual changes (see Appendix F Table 1-6.1 and Tables 4.9-1 through 4.9-10 with particular attention to the tables associated with KOP 9, where the view blockage is perhaps greater for Alternative 3 than Alternative 2).

Figure 3.3-29 KOP 1 (IN-1) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-30 KOP 2 (PC-2) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-31 KOP 3 (NM-2) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-32 KOP 4 (CM-2) – Existing Conditions (top) Alternative 3 Simulation (bottom)

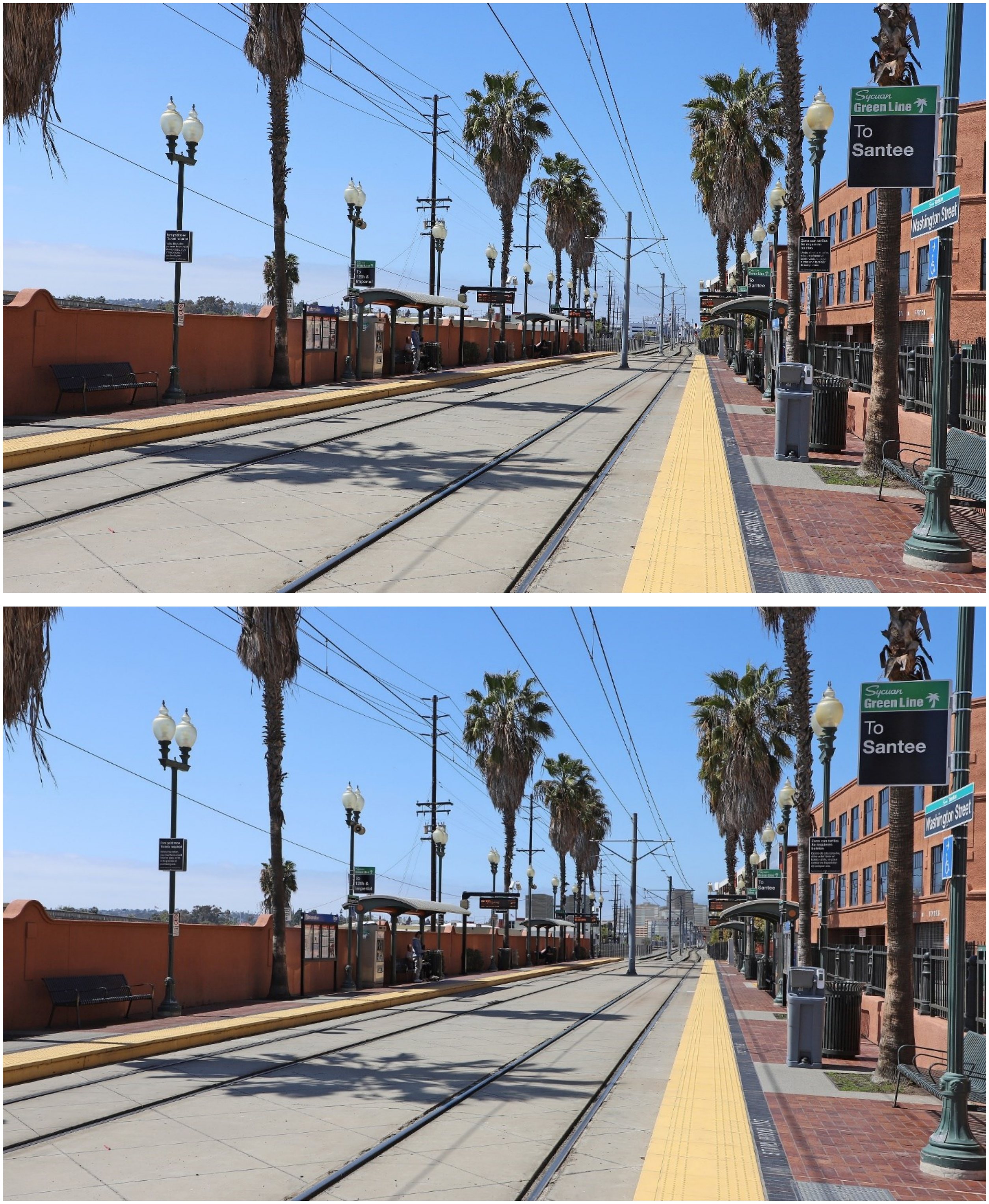


Figure 3.3-33 KOP 5 (SP-2) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-34 KOP 6 (OT-1) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-35 KOP 7 (OT-6) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-36 KOP 8 (NP-1) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-37 KOP 9 (NP-3) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Figure 3.3-38 KOP 10 (CH-2) – Existing Conditions (top) Alternative 3 Simulation (bottom)

Viewer concerns would be highest for residential property owners and those that rent housing in the area, as well as tourists, walkers, joggers, and bikers. These viewers would be more likely to be sensitive to changes that are demonstrated on KOP 6 (Table 4.9-6 in Appendix F), KOP 8 (Table 4.9-8 in Appendix F), KOP 9 (Table 4.9-9 in Appendix F), and KOP 10 (Table 4.9-10 in Appendix F).

All these viewer groups would likely have moderately high concerns about the changes shown in the simulations. Because of likely viewers concerns, Alternative 3 would result in significant impacts to viewer groups.

Viewing Scenes

Figures A-23 through A-33 in Appendix F Attachment A show the potential view corridor blockage to each of the sub-regionally important viewing scenes. Figure 3.3-39 graphically presents the relative percentage of potential view blockage for each of the scenes. Based on the high percentage of 90- to 240-foot-tall buildings, views across OTC would be partially blocked with more significant blockage occurring towards Mission Bay and the University of San Diego, but less than Alternative 2. Table 3.3-11 presents the potential view blockage per view scene in a tabular form and calculates the potential population affected based on SANDAG Master Geographical Reference Areas with associated population estimates for 2016 and 2035. For Alterative 3, the range of potential impact is estimated to be from 9.57 percent for the Downtown Skyline up to 47.74 percent for Mission Valley North, with an average of 24.52 percent. The total population who would be able to see less of the sub-regional viewing scenes than under existing conditions is 5,922 viewers (2016) and 6,259 viewers (2035).

Table 3.3-11 Summary of Alternative 3 Viewing Scene Impacts

Viewing Scene(1)	*Percent of Area*	*2016 Pop. In Viewing Location*	*2016 Pop. Potentially Affected(2)*	*2035 Pop. In Viewing Location*	*2035 Pop. Potentially Affected(2)*
1. San Diego River	44.58%	3,876	1,728	3,776	1,683
2. Mission Bay	29.55%	3,876	1,145	3,776	1,116
3. Mission Valley North	47.74%	2,143	1,023	2,314	1,105
4. Presidio/Mission Hills	20.07%	11,560	2,320	13,852	2,780
5. Pacific Ocean West	14.48%	4,220	611	3,874	561
6. Pacific Ocean Southwest	18.74%	2,550	478	1,994	374
7. San Diego Bay/Coronado	22.76%	6,038	1,374	6,782	1,544
8. Cabrillo	10.85%	4,927	535	4,538	492
9. Pt Loma Hillside	26.84%	9,059	2,432	9,162	2,459
10. Downtown Skyline	9.57%	1,158	111	2,606	249
Average Percent of View Blocked(1)	24.52%	24,154(3)	5,922	25,528(3)	6,259

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

Note(s): (1) Percent of view area effected is based upon a topographic model only and does not include buildings, structures.
(2) Persons affected were based on SANDAG Master Geographical Reference Areas estimates for 2016 and 2035. Calculations assumed even distribution across Master Geographical Reference Areas.
(3) Populations in the various viewing locations overlap. This number has taken out the double counting of persons.

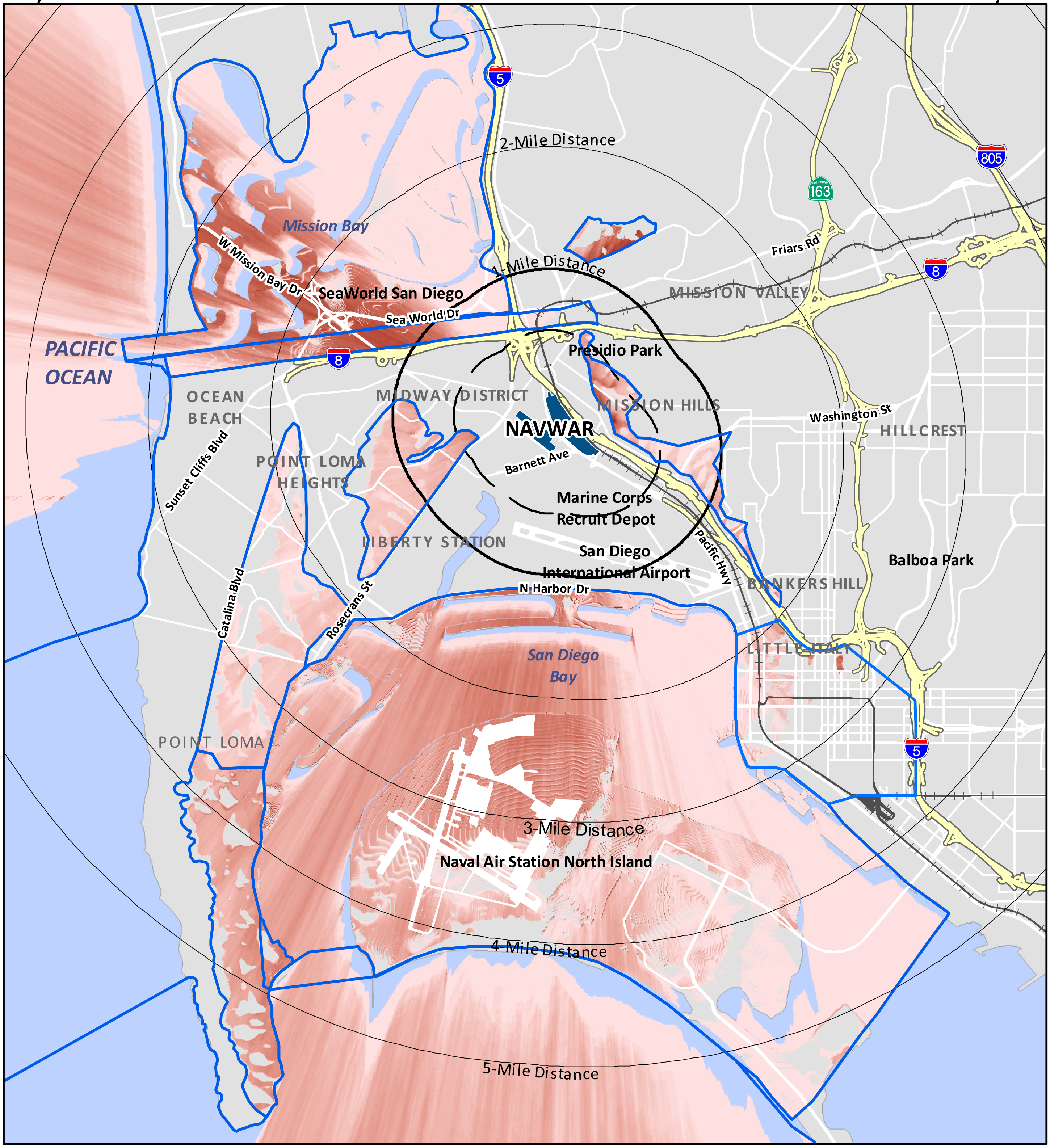
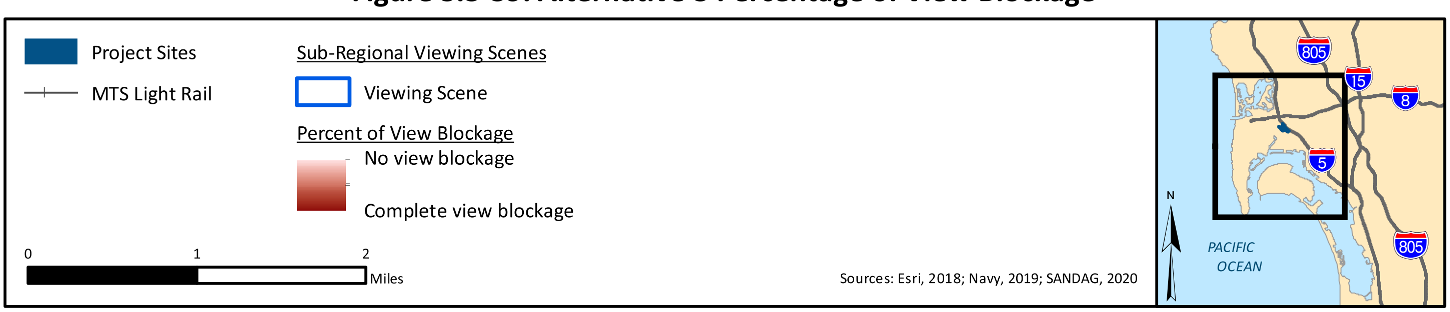


Figure 3.3-39. Alternative 3 Percentage of View Blockage



View Quality

Table 3.3-11 presents how Alternative 3 would affect viewing scenes that are sub-regionally important. Alternative 3 would potentially block from 10 percent to 47 percent of the total views, with special concern for affected views of San Diego Bay, Cabrillo Point, and the Point Loma Hillside. KOPs 2, 3, 4, 5, and 6 are not considered to have adverse impacts associated with Alternative 3. Of the ten KOPs shown in Table 3.3-12, a moderate adversity is shown for KOPs 1, 7, 8, 9, and 10. Since this alternative generally has lower heights and massing of buildings compared to Alternatives 2, 4, and 5, the impacts would be less. This can be seen in KOPs 4, 6, 7, 8, and 10 where the heights of the buildings do not silhouette against the sky or into the ocean horizon line. However, a small number of buildings do slightly silhouette at their upper limits of height.

As with Alternative 2, most of these view corridor impacts are from private views, with only three or four public viewing locations from North Mission Hills affected. KOP 8 from Presidio Park is a public viewing location with moderate view blockage. However, the buildings appear more in scale and all but one building sits below the open sky, just below the horizon line formed by Point Loma. Therefore, Alternative 3 would result in a significant impact to view quality.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-12 contains the ranking of each of the 10 KOPs and summarizes the changes to visual quality under Alternative 3.

Table 3.3-12 Summary of Alternative 3 View Quality Impacts

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

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

Given the range of view blockage but tempered with the fact that the proposed buildings are not as high as Alternatives 2, 4, and 5, Alternative 3 would have a significant (moderately high) impact on viewing scenes resulting from blockage of view corridors.

Visual Quality

As with Alternative 2, the development under Alternative 3 would be of a moderately high or high level of aesthetics and the project would have a positive impact on the visual quality of an area. Alternative 3 would contrast with the existing visual setting and several viewer groups would likely have concerns with these contrasts. Therefore, Alternative 3 would result in a significant impact related to contrast with setting. The LAUs around OTC to the south, west, and north have an overall lower visual quality than LAUs to the east. Therefore, the contrast with the quality of the adjacent areas would not create a significant visual quality impact (see Figure 3.3-7, along with Tables 4.9-1 through 4.9-10 in Appendix F). The areas to the south, southwest, west, northwest, and north do not have a high visual quality associated with them. Therefore, Alternative 3 would have a positive impact on these adjacent areas and on the overall visual environment for this part of the AVE**.** The LAUs around OTC to the northeast, east, and southeast have a higher visual quality. As shown in KOPs 6, 8, and 9 and summarized in Table 3.3-13, Alternative 3 would lower the visual quality of these areas. Therefore, Alternative 3 would result in a significant impact to visual quality in those areas.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-13 contains the ranking of each of the 10 KOPs and summarizes the changes to visual quality under Alternative 3.

Table 3.3-13 Summary of Alternative 3 Visual Quality Impacts

Key Observation Point	***Existing Average Quality (1)***	***Resulting Predicted Visual Quality (1)***	***Degree of Visual Quality Change***
KOP 1 (IN-1): Interstate 5 Southbound	Moderate	Moderately High	Slightly Improved Quality
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderately Low	Moderate	Slightly Improved Quality
KOP 3 (NM-2): Sports Arena and Rosecrans North Midway Sub-Area	Low	Moderate	Moderately Improved Quality
KOP 4 (CM-2): Midway Drive and OTC Site 2 in Central Midway Sub-Area	Low	Moderate	Moderately Improved Quality
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	Moderately High	High	Slightly Improved Quality
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	Moderately High	Moderately Low	Major Lowered Quality
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	Moderately High	Moderate	Slightly Lowered Quality
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High	Moderate	Moderately Lowered Quality
KOP 9 (NP-3): Altamirano and Presidio Drive in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 10 (CH-2): Hayden and Linwood in Central Mission Hills Sub-Area	High	Moderately High	Slightly Lowered Quality

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

As with Alternative 2, the existing structures on OTC would be demolished resulting in a moderately low loss of visual resources. Based on Table 3.3-13, the visual quality rankings presented Figure 3.3-7, and the simulations displayed in KOPs 1, 2, 3, 4, and 5, a beneficial impact for areas south, southwest, west, northwest, and north of OTC would occur. Alternative 3 would increase the existing moderate and low visual quality to moderately high and moderate. The visual quality of areas to the northeast, east, and southeast, as shown in the simulations for KOPs 6 through 10 and in Figure 3.3-7 would be impacted. Therefore, Alternative 3 would have a less than significant (moderate) impact to visual quality.

Aesthetics

- Would the amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, be removed, altered, or demolished?
    - **Response:** No. Impacts to community character would be the same as described for Alternative 2, but the density of development under Alternative 3 is slightly reduced. Therefore, there would be a less than significant (moderately low) impact on community character under Alternative 3.
- Would any substantial amount of natural open space be graded or developed?
    - **Response:** No. No open space exists OTC, and no impacts to landform quality would occur from grading or development. Therefore, there would be a less than significant impact to landform quality under Alternative 3.
- Would proposed structures in natural open space areas be effectively integrated into the aesthetics of the site through appropriate design?
    - **Response:** No open space exists on OTC.
- Would a degree of contrast occur between proposed features and existing features that represent the area's valued aesthetic image?
    - **Response:** Yes. Impacts to aesthetics would be the same as described for Alternative 2, but the scale of Alternative 3 is slightly reduced, and thus presents slightly less of a contrast. Therefore, would be a beneficial impact to aesthetic quality.
- Would the degree to which a proposed zone change result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements?
    - **Response:** Yes. Impacts would be similar to those described for Alternative 2, but the density of development under Alternative 3 is slightly reduced, so the degree of change would be slightly less, but still present a significant impact. Therefore, there would be significant impacts related to the degree of change under Alternative 3.
- Would the degree to which the project contributes to the area's aesthetics, applicable guidelines, or regulations be impacted?
    - **Response:** Yes. The impact to future community character and goal attainment within local community plan would be the same as Alternative 2, with the scale and density of the development being slightly smaller. Therefore, a similar beneficial impact would occur under Alternative 3 to future community character.

Therefore, Alternative 3 would result in less than significant impacts on aesthetics.

Obstruction of Views

- Would an impact to the nature and quality of recognized or valued views occur including features such as topography, man-made or natural features of visual interest, and resources such as mountains or the ocean?
    - **Response:** Yes. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect views from a scenic highway, corridor, or parkway?
    - **Response:** Yes. The impacts to eligible scenic highways would be similar but slightly less than those described for Alternative 2. Therefore, Alternative 3 would have a less than significant impact on scenic highways.
- Would the extent of a view obstruction (e.g., total blockage, partial interruption, or minor diminishment) block existing views?
    - **Response:** Yes. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single or a fixed vantage point?
    - **Response:** Yes. Refer to viewing scenes and view quality sections above.

Therefore, Alternative 3 would have significant impacts related to obstructing views.

Shade and Shadow

The shadow analysis was completed for December 21st and June 20th. The winter solstice results were shown in Figure 4.17-2 and the summer solstice results were shown in Figure 4.17-4 in Appendix F. Since Alternative 3 would involve slightly less development than Alternative 2, in both density and scale, the potential shadow effects would also be less than significant.

Light and Glare

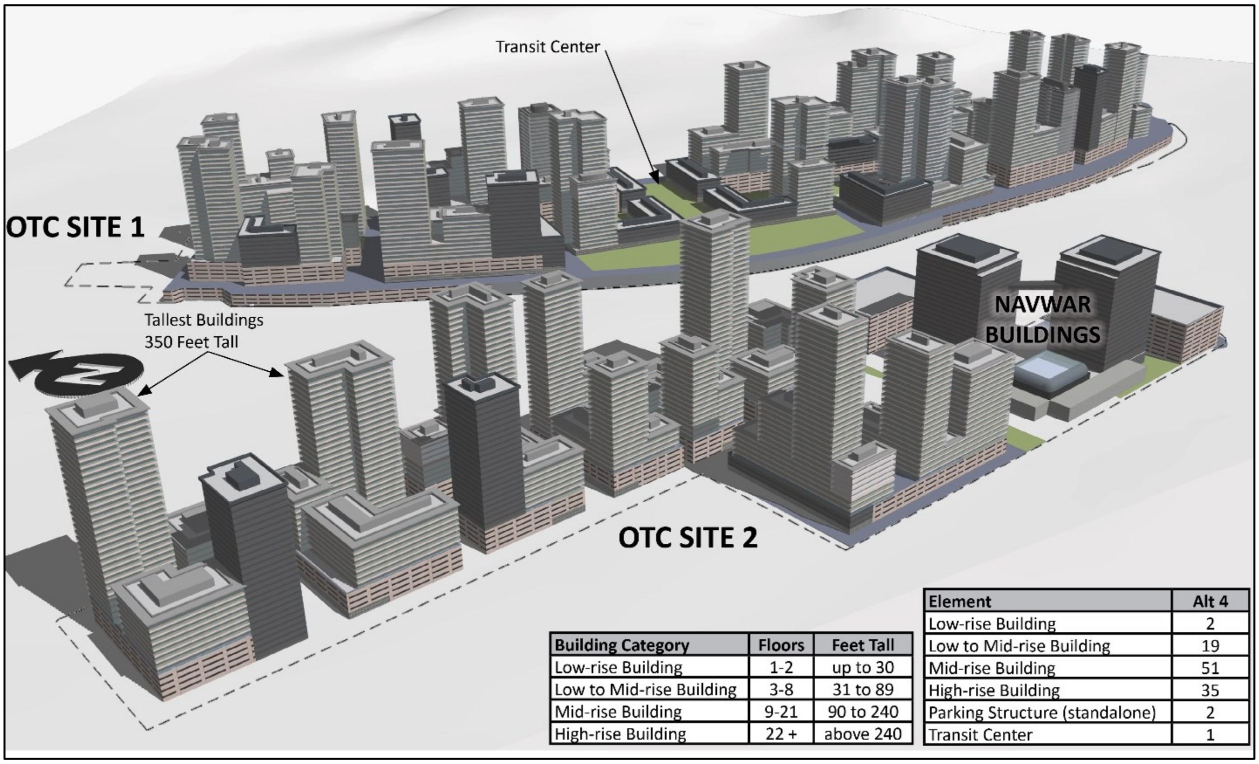
Alternative 3 would result in similar, though slightly reduced, impacts to light and glare as described for Alternative 2. Therefore, Alternative 3 would result in significant impacts to light and glare.

Impact Conclusion

Based on the analysis presented above, Alternative 3 would have a significant impact to visual resources.

3.3.4.6 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

Figure 3.3-40 represents a 3D model of massing that would accommodate the needs of this alternative. This diagram is not intended to show an actual architectural design nor to commit to any massing arrangement of these buildings other than indicating the general height, number of floors, and parking structures needed to represent the requirements of the alternatives. The diagrams on and simulations using this alternative are intended to show how these buildings might typically look, but a final architectural design may be highly variable. The table in Figure 3.3-40 is a quantitative summary of the major physical features of the alternative including floors, heights, and number of total buildings being considered.



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

Element	Alt 4
Low-rise Building	2
Low to Mid-rise Building	19
Mid-rise Building	51
High-rise Building	35
Parking Structure (standalone)	2
Transit Center	1

Figure 3.3-40 General Building Massing of Alternative 4

This alternative would include buildings up to 350 feet tall. Major parking lots and structures would be required to support the parking requirements. In this alternative, much of the parking would be below a 30-foot deck with much of the vehicular circulation and parking taking place below this deck and plazas, promenades, parks, and smaller streets on top of these decks. This alternative would also accommodate a major transit center and public spaces that would divide OTC Site 1 into two separated complexes or groupings of buildings. NAVWAR parking requirements would mostly be met by standalone parking. Of the 109 buildings shown in Figure 3.3-40, 2 percent would be low rise below 30 feet, 19 percent would be low-to mid-rise from 31 feet to 89 feet, 47 percent would be mid-rise from 90 feet to 240 feet, and the remaining 32 percent would be high-rise buildings representing a height up to 350 feet tall. All standalone parking structures are considered low- to mid-rise buildings.

Figures 3.3-41 through 3.3-50 show the visual simulations for Alternative 4 from each of the 10 KOPs. Attachment B to Appendix F displays the exiting condition photographs, the simulations for all the alternatives, and provides a composite summary of potential impacts.

Impact Analysis

During Construction

Alternative 4 would have the same types of visual impacts during construction as Alternative 2 but would be significantly more in magnitude due to the taller building heights and more development being proposed. A temporary significant impact to visual quality, community character and aesthetics would be expected.

KOP Locations and Viewer Groups

Alternative 4 would be visible from all 10 KOPs. For each KOP, potential viewer groups have been identified and ranked as to their likely response to visual changes (see Appendix F Table 1-6.1 and Tables 4.9-1 through 4.9-10 with particular attention to the table associated with KOPs 6, 7, 8, 9, and 10 where the view blockage is greater for Alternative 4 than any other alternative).

Figure 3.3-41 KOP 1 (IN-1) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-42 KOP 2 (PC-2) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-43 KOP 3 (NM-2) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-44 KOP 4 (CM-2) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-45 KOP 5 (SP-2) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-46 KOP 6 (OT-1) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-47 KOP 7 (OT-6) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-48 KOP 8 (NP-1) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-49 KOP 9 (NP-3) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Figure 3.3-50 KOP 10 (CH-2) – Existing Conditions (top) Alternative 4 Simulation (bottom)

Viewer concerns would be highest for residential property owners and those that rent housing in the area, as well as tourists, walkers, joggers, and bikers. These viewers would be more likely to be sensitive to changes that are demonstrated on KOP 6 (Table 4.9-6 in Appendix F), KOP 7 (Table 4.9-7 in Appendix F), KOP 8 (Table 4.9-8 in Appendix F), KOP 9 (Table 4.9-9 in Appendix F), and KOP 10 (Table 4.9-10 in Appendix F). All viewer groups would be likely to have at least a moderately low concern about the changes shown in KOP 1 but only a low to moderately low concern for KOPs 2, 3, 4, and 5. In general, viewers would be likely to have a high level of concern for KOPs 6, 7, 8, 9, and 10. Because of likely viewer concerns, Alternative 4 would result in significant impacts to viewer groups.

Viewing Scenes

Figures A-34 through A-44 in Appendix F Attachment 1 show the potential view corridor blockage to each of the sub-regionally important viewing scenes. Figure 3.3-51 graphically presents the relative percentage of potential view blockage for each of the scenes. Based on the high percentage of 90- to 350-foot-tall buildings, views across OTC would be partially blocked with more significant blockage occurring towards Mission Bay and the University of San Diego. The degree of view blockage would be greater than Alternatives 2, 3 or 5. Table 3.3-14 presents the potential view blockage per view scene in a tabular form and calculates the potential population affected based on SANDAG Master Geographical Reference Areas with associated population estimates for 2016 and 2035. For Alterative 4, the range of potential impact is estimated to be from 11.73 percent for the Downtown Skyline up to 61.89 percent for the San Diego River, with an average of 37.08 percent. The total population who would be able to see less of the sub-regional viewing scenes than under existing conditions is 8,957 viewers (2016) and 9,467 viewers (2035).

Table 3.3-14 Summary of Alternative 4 Viewing Scene Impacts

Viewing Scene[(1)]	*Percent of Area*	*2016 Pop. In Viewing Location*	*2016 Pop. Potentially Affected*[(2)]	*2035 Pop. In Viewing Location*	*2035 Pop. Potentially Affected*[(2)]
1. San Diego River	61.89%	3,876	2,399	3,776	2,337
2. Mission Bay	37.93%	3,876	1,470	3,776	1,432
3. Mission Valley North	61.06%	2,143	1,309	2,314	1,413
4. Presidio/Mission Hills	32.26%	11,560	3,729	13,852	4,468
5. Pacific Ocean West	25.94%	4,220	1,095	3,874	1,005
6. Pacific Ocean Southwest	35.85%	2,550	914	1,994	715
7. San Diego Bay/Coronado	36.72%	6,038	2,217	6,782	2,490
8. Cabrillo	23.30%	4,927	1,148	4,538	1,058
9. Pt Loma Hillside	44.16%	9,059	4,000	9,162	4,046
10. Downtown Skyline	11.73%	1,158	136	2,606	306
Average Percent of View Blocked[(1)]	37.08%	24,154[(3)]	8,957	25,528[(3)]	9,467

Legend: % = percent; Pop. = Population.

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

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

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

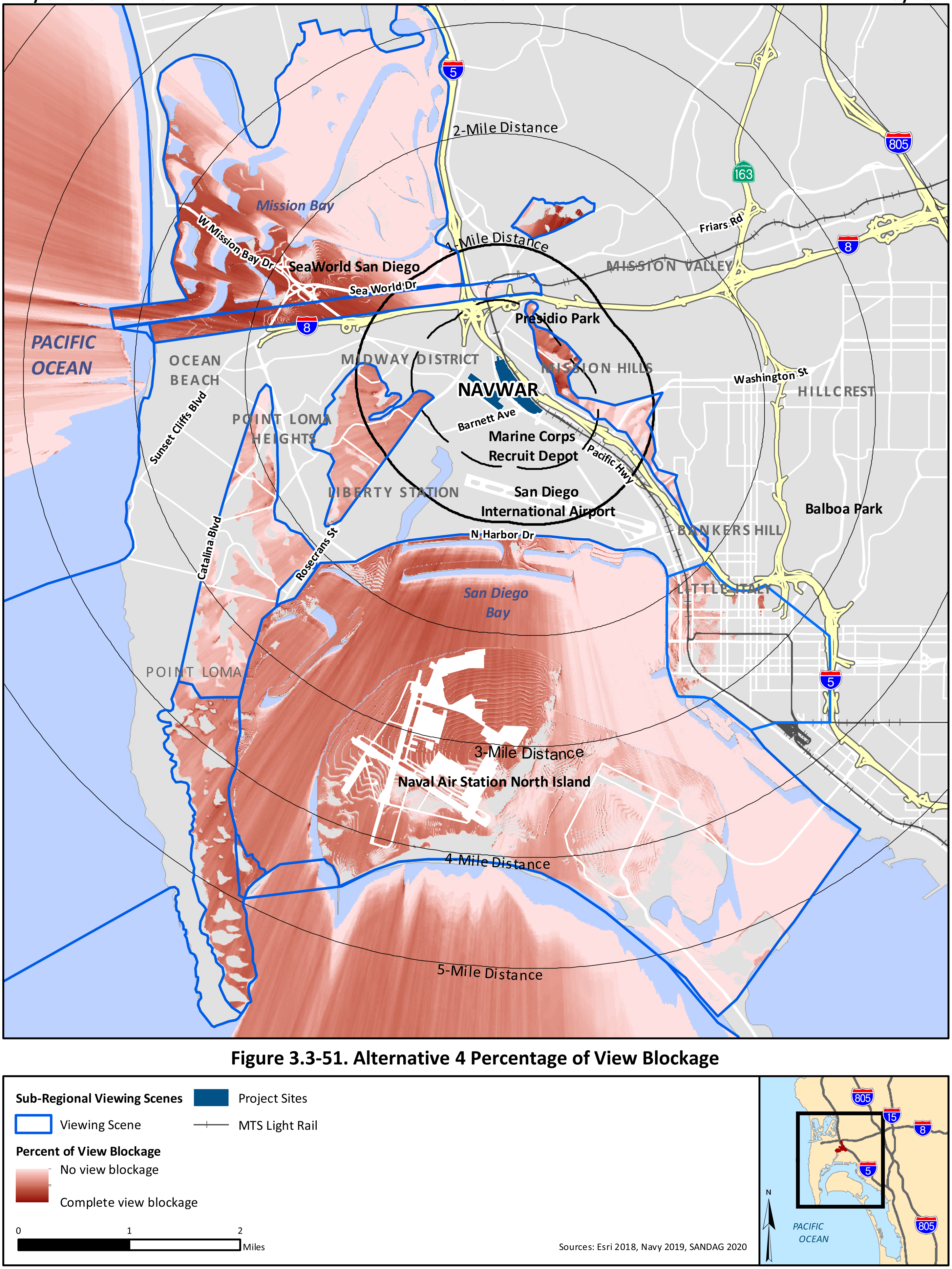


Figure 3.3-51. Alternative 4 Percentage of View Blockage

View Quality

Table 3.3-14 presents how Alternative 4 would affect viewing scenes that are sub-regionally important. Alternative 4 would potentially block from 11 percent to 62 percent of the total views, with special concern for affected views of San Diego Bay, Coronado, Mission Bay, San Diego River, Cabrillo Point, and the Point Loma Hillside. KOPs 3, 5, and 6 are not considered to have adverse impacts associated with Alternative 4. Of the 10 KOPs shown in Table 3.3-15, moderate adversity is shown for KOPs 2 and 4, with a moderately high adversity for KOP 1 and high adversity for KOPs 7, 8, 9, and 10. Therefore, Alternative 4 would result in a significant impact to view quality.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-15 contains the ranking of each of the 10 KOPs simulations and summarizes the changes in view quality.

Given the range of view blockage and the height and placement of these buildings in the viewing corridor, view quality would be adversely impacted. Alternative 4 would have a significant (high) impact on viewing scenes resulting from blockage of view corridors. Especially impactful effects on views can be seen in the simulations for KOPs 6, 7, 8, and 10.

Table 3.3-15 Summary of Alternative 4 View Quality Impacts

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

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

Visual Quality

As with Alternative 2, the development under Alternative 4 would be of a moderately high or high level of aesthetics and the project would have a positive impact on the visual quality of an area, including the transit center on OTC.

The LAUs around OTC to the south, west, and north have an overall lower visual quality than LAUs to the east. Therefore, the contrast with the quality of the adjacent areas would not create a significant visual quality impact to these areas. This conclusion is based on the visual quality rankings presented in Figure 3.3-7, along with Tables 4.9-1 through 4.9-10 in Appendix F. The areas to the south, southwest, west, northwest, and north do not have a high visual quality associated with them. Therefore, Alternative 4 could be expected to have a positive impact on these adjacent areas and on the overall visual environment for this part of the AVE. The LAUs around OTC to the northeast, east, and southeast do have a higher visual quality. As indicated in KOPs 6, 8, and 9 and shown on Table 3.3-16, Alternative 4 could lower the visual quality of the area. Therefore, Alternative 4 would result in a significant impact to visual quality.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-16 contains the ranking of each of the 10 KOPs and summarizes the changes to visual quality.

Table 3.3-16 Summary of Alternative 4 Visual Quality Impacts

Key Observation Point	*Existing Average Quality[1]*	*Resulting Predicted Visual Quality[1]*	*Degree of Visual Quality Change*
KOP 1 (IN-1): Interstate 5 Southbound	Moderate	High	Moderately Improved Quality
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderately Low	Moderately High	Major Quality Improvement
KOP 3 (NM-2): Sports Arena and Rosecrans North Midway Sub-Area	Low	Moderately Low	Slightly Improved Quality
KOP 4 (CM-2): Midway Drive and OTC Site 2 in Central Midway Sub-Area	Low	Moderately High	Major Quality Improvement
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	Moderately High	Moderately High	No Change
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	Moderately High	Low	Major Lowered Quality
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	Moderately High	Moderate	Slightly Lowered Quality
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 9 (NP-3): Altamirano and Presidio Drive in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 10 (CH-2): Hayden and Linwood in Central Mission Hills Sub-Area	High	Moderate	Moderately Lowered Quality

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

No existing visual assets would be removed by the project. Based on Table 3.3-17, Figure 3.3-7, and as displayed in the simulations for KOPs 1, 2, 3, 4, and 5, for areas south, southwest, west, northwest, and north of OTC, a positive impact would occur. Alternative 4 would increase the existing moderate and low visual quality to moderately high and moderate, which would result in a slight beneficial impact. The visual quality of areas to the northeast, east, and southeast, as shown in the simulations in KOPs 6 through 10, Figure 3.3-7, and in Tables 4.9-1 through 4.9-10 in Appendix F, would be adversely impacted. Therefore, Alternative 4 would have a significant (moderately high) impact on visual quality.

Aesthetics

- Would the amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, be removed, altered, or demolished?
    - **Response:** No. Impacts to community character would be the same as described for Alternative 2, but the density and scale of development under Alternative 4 is greater. Alternative 4 also involves the consolidation of transit functions on OTC, but these functions already exist in the community. Therefore, there would be a less than significant (moderately low) impact on community character under Alternative 4.
- Would any substantial amount of natural open space be graded or developed?
    - **Response:** No. No open space exists OTC, and no impacts to landform quality would occur from grading or development. Therefore, there would be a less than significant impact to landform quality under Alternative 4.
- Would proposed structures in natural open space areas be effectively integrated into the aesthetics of the site through appropriate design?
    - **Response:** No open space exists on OTC.
- Would a degree of contrast occur between proposed features and existing features that represent the area's valued aesthetic image?
    - **Response:** Yes. Impacts to aesthetics would be the same as described for Alternative 2, but the scale and density of Alternative 4 is greater and will present a higher contrast between the existing features of the AVE. The consolidated transit functions on OTC already exist within the AVE and adjacent to OTC, and thus there would not be a high degree of contrast due to the transit uses. Therefore, would be a beneficial impact to aesthetic quality under Alternative 4.
- Would the degree to which a proposed zone change result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements?
    - **Response:** Yes. Impacts would be similar to those described for Alternative 2, but the density of development under Alternative 4 is greater, so the degree of change would be greater. The consolidation of transit functions under Alternative 4 does not present a high degree of change from the style or image of the area, as they already exist in the AVE and are located adjacent to OTC. Therefore, there would be significant impacts related to the degree of change under Alternative 4.
- Would the degree to which the project contributes to the area's aesthetics, applicable guidelines, or regulations be impacted?

- **Response:** Yes. The impact to future community character and goal attainment within local community plan would be the same as Alternative 2, with the scale and density of the development being greater. Therefore, a similar beneficial impact would occur under Alternative 4 to future community character.

Therefore, Alternative 4 would have a less than significant impact on aesthetics.

Obstruction of Views

Would the project result in any of the following:

- Would an impact to the nature and quality of recognized or valued views occur including features such as topography, man-made or natural features of visual interest, and resources such as mountains or the ocean?
  - **Response:** Yes. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect views from a scenic highway, corridor, or parkway?
  - **Response:** Yes. The impacts to eligible scenic highways would be similar but slightly greater than those described for Alternative 2. Therefore, Alternative 4 would have a less than significant impact (moderate) on scenic highways.
- Would the extent of a view obstruction (e.g., total blockage, partial interruption, or minor diminishment) block existing views?
  - **Response:** Yes. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single or a fixed vantage point?
  - **Response:** Yes. Refer to viewing scenes and view quality sections above.

Therefore, Alternative 4 would have significant impacts related to obstructing views.

Shade and Shadow

The shadow analysis was completed for December 21st and June 20th. The winter solstice results are shown in Figure 4.17-3 and the summer solstice results are shown in Figure 4.17-5 in Appendix F. During the winter months, the sensitive receptors east of Interstate 5 could be affected by more than 3 hours of shade. These include two hotels, a few single-family homes, a few small apartment complexes, and a portion of Walter Anderson nursery. During the summer months, only a portion of Walter Anderson nursery would be affected by more than 4 hours of shade. Therefore, the potential shade and shadow effects would be less than significant under Alternative 4.

Light and Glare

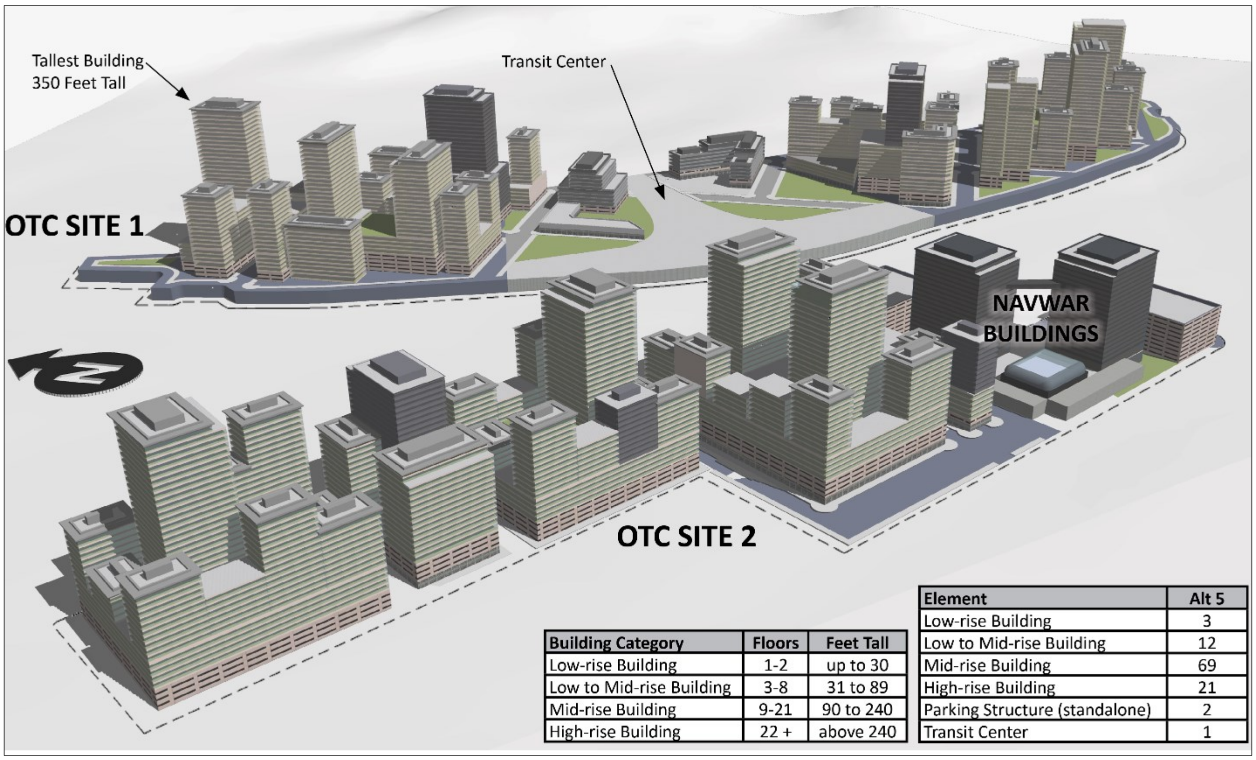
Alternative 4 would result in similar, though greater, impacts to light and glare as described for Alternative 2. Therefore, Alternative 4 would result in significant impacts to light and glare.

Impact Conclusion

Based on the analysis presented above, Alternative 4 would have a significant impact to visual resources.

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

Figure 3.3-52 represents a 3D model of massing that would accommodate the needs of this alternative. This diagram is not intended to show an actual architectural design nor to commit to any massing arrangement of these buildings other than indicating the general height, number of floors, and parking structures needed to represent the requirements of Alternative 5. The diagrams and simulations using this alternative are intended to show how these buildings might typically look, but a final architectural design may be highly variable. The table in Figure 3.3-52 is a quantitative summary of the major physical features of the alternative including floors, heights, and number of total buildings being considered.



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

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

Figure 3.3-52 General Building Massing of Alternative 5

This alternative includes buildings up to 350 feet tall. Major parking lots and structures would be required to support the parking requirements needed for the total gross and net square feet of the building complex. In this alternative, much of the parking would be below a 30-foot deck with much of the vehicular circulation and parking taking place below this deck and plazas, promenades, parks, and smaller streets on top of these decks. This alternative would also accommodate a major transit center and public spaces that would divide OTC Site 1 into two separated complexes or grouping of buildings. NAVWAR parking requirements would mostly be met by standalone parking structures. Of the 107 buildings shown in Figure 3.3-52, 3 percent would be low rise below 30 feet, 13 percent would be low-to mid-rise from 31 feet to 89 feet, 65 percent would be mid-rise from 90 feet to 240 feet, and the remaining 19 percent would be high-rise buildings representing a height up to 350 feet tall. All standalone parking structures are considered low- to mid-rise buildings.

Figures 3.3-53 through 3.3-62 shown the visual simulations for Alternative 5 from each of the ten KOPs selected. Attachment B to Appendix F displays the exiting condition photographs, the simulations for all the alternatives, and provides a composite summary of potential impacts.

Impact Analysis

During Construction

Alternative 5 would have the same types of visual impacts during construction as Alternative 2 but would be significantly more in magnitude due to the taller building heights and more development being proposed. A temporary significant impact to visual quality, community character and aesthetics would be expected.

KOP Locations and Viewer Groups

Alternative 5 would be visible from all 10 KOPs. For each KOP, potential viewer groups have been identified and ranked as to their likely response to visual changes (see Appendix F Table 1-6.1 and Tables 4.9-1 through 4.9-10 with particular attention to the table associated with KOPs 6, 7, 8, 9, and 10 where the view blockage is perhaps greater for Alternative 5 than any other Alternative). Viewer concerns would be highest for residential property owners and those that rent housing in the area, as well as tourists, walkers, joggers, and bikers. These viewers would be more likely to be sensitive to changes that are demonstrated on KOP 6 (Table 4.9-6 in Appendix F), KOP 7 (Table 4.9-7 in Appendix F), KOP 8 (Table 4.9-8 in Appendix F), KOP 9 (Table 4.9-9 in Appendix F), and KOP 10 (Table 4.9-10 in Appendix F). All viewer groups would likely have at least a moderately low opinion about the changes shown in KOP 1 but only a low to moderately low for KOPs 2, 3, 4, and 5. In general, viewers would be likely to have a high level of concern for KOPs 6, 7, 8, 9, and 10. Because of likely viewers concerns, Alternative 5 would result in significant impacts to viewer groups.

Figures A-45 through A-55 in Appendix F Attachment 1 show the potential view corridor blockage to each of the sub-regionally important viewing scenes. Figure 3.3-63 graphically presents the relative percentage of potential view blockage for each of the scenes. Based on the high percentage of 90- to 350-foot-tall buildings, views across OTC may be partially blocked with more significant blockage occurring towards Mission Bay and University of San Diego. Alternative 5 would have less blockage than Alternative 4, but more than Alternatives 2 or 3. Table 3.3-17 presents the potential view blockage per view scene in a tabular form and calculates the potential population affected based on SANDAG Master Geographical Reference Areas with associated population estimates for 2016 and 2035. For Alterative 5, the range of potential impact is estimated to be from 21.28 percent for the Downtown Skyline up to 65.36 percent for Mission Valley North, with an average of 38.70 percent. The total population who would be able to see less of the sub-regional viewing scenes than under existing conditions is 9,347 viewers (2016) and 9,879 viewers (2035).

Figure 3.3-53 KOP 1 (IN-1) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-54 KOP 2 (PC-2) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-55 KOP 3 (NM-2) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-56 KOP 4 (CM-2) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-57 KOP 5 (SP-2) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-58 KOP 6 (OT-1) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-59 KOP 7 (OT-6) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-60 KOP 8 (NP-1) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-61 KOP 9 (NP-3) – Existing Conditions (top) Alternative 5 Simulation (bottom)

Figure 3.3-62 KOP 10 (CH-2) – Existing Conditions (top) Alternative 5 Simulation (bottom)

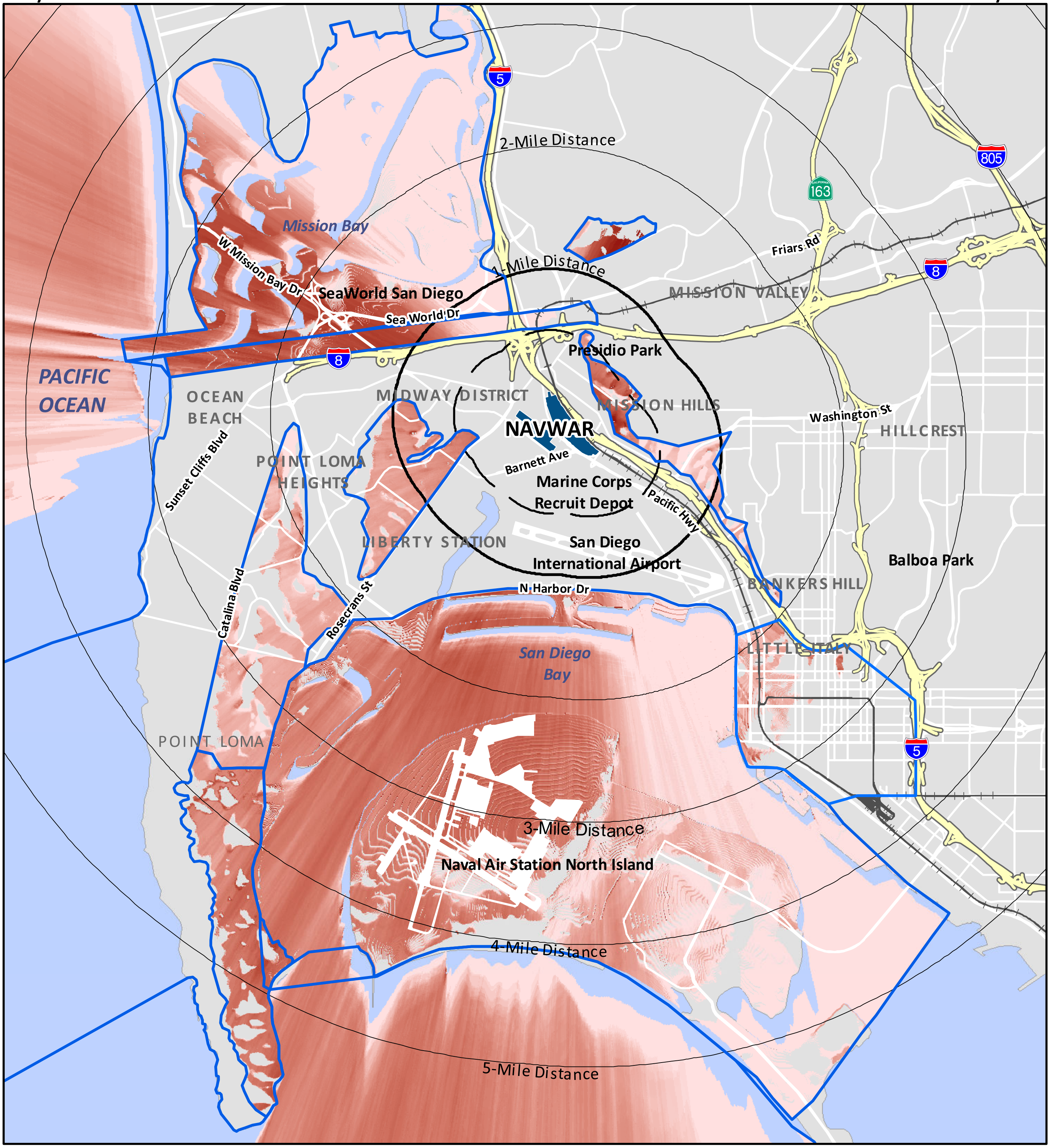


Figure 3.3-63. Alternative 5 Percentage of View Blockage

Project Sites

MTS Light Rail

Sub-Regional Viewing Scenes

Viewing Scene

Percent of View Blockage

No view blockage

Complete view blockage

0 1 2 Miles

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020

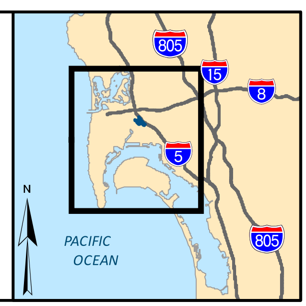


Table 3.3-17 Summary of Alternative 5 Viewing Scene Impacts

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

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

Note(s): (1) Percent of view area effected is based upon a topographic model only and does not include buildings, structures.
(2) Persons affected were based on SANDAG Master Geographical Reference Areas estimates for 2016 and 2035. Calculations assumed even distribution across Master Geographical Reference Areas.
(3) Populations in the various viewing locations overlap. This number has taken out the double counting of persons.

View Quality

Table 3.3-17 presents how Alternative 5 may affect viewing scenes that are sub-regionally important. Alternative 5 would potentially block from 21 percent to 65 percent of the total views, with special concern for affected views of San Diego Bay, Coronado, Mission Bay, San Diego River, Cabrillo Point, and the Point Loma Hillside. The simulations for KOPs 3, 5, and 6 show there would not be adverse view impacts associated with Alternative 5. Of the 10 KOPs, KOPs 2 and 4 would result in moderate adversity, KOP 1 would result in moderately high adversity, and KOPs 7, 8, 9, and 10 would result in high adversity. Therefore, Alternative 5 would result in a significant impact to view quality.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-18 contains the ranking of each of the 10 KOPs and summarizes the changes to view quality under Alternative 5.

Table 3.3-18 Summary of Alternative 5 View Quality Impacts

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

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

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

Given the range of view blockage and the height and placement of these buildings in the viewing corridor, Alternative 5 would impact views. Alternative 5 would have a significant (high) impact on viewing scenes resulting from blockage of view corridors. Especially impactful effects on views can be seen on KOPs 6, 7, 8 and 10.

Visual Quality

A project may either improve the overall visual quality in an area, or it can be neutral or damaging to an area's visual quality. To have a high or moderately high adverse impact to the visual quality for areas within 0.5 mile of OTC Site 1 or OTC Site 2, the Proposed Action Alternatives elements would need to demonstrate that they contrast highly with the existing setting. If an adjacent area has a high visual quality associated with it, and if the project has a lower visual quality, this change in quality of the immediate area would be considered to have an adverse change. From an aesthetics perspective, Alternative 5 would be assumed to be of a moderately high or high level of aesthetics. This assumption is based on the investment levels expected, the assumed positive design efforts, and the rigorous reviews likely to be required. Given these assumptions, Alternative 5 could have a positive impact on the visual quality. This is true if the project induces growth and sets a higher standard for the immediate area. Alternative 5 would contrast with the existing setting and several viewer groups would likely have concerns. Therefore, Alternative 5 would result in a significant impact related to contrast with setting.

Visual quality is determined by the combination of an area's vividness, unity, and intactness. The LAUs around OTC to the south, west, and north have an overall lower visual quality than LAUs to the east. Therefore, the contrast with the quality of the adjacent areas would not create a significant visual quality impact to these areas. This conclusion is based on Figure 3.3-6, along with Tables 4.9-1 through 4.9-10 in Appendix F. The areas to the south, southwest, west, northwest, and north do not have a high visual quality associated with them. Therefore, Alternative 5 could be expected to have a positive impact on these adjacent areas and on the overall visual environment for this part of the AVE**.** The LAUs around OTC to the northeast, east, and southeast do have a higher visual quality. As indicated in KOPs 6, 8, and 9 and shown on Table 3.3-19, Alternative 5 could lower the visual quality of the area. Therefore, Alternative 5 would result in a significant impact to visual quality.

Section 4.9 of Appendix F contains a detailed assessment of each KOP under this action alternative. Table 3.3-19 contains the ranking of each of the 10 KOPs and summarizes the changes to visual quality under Alternative 5.

Table 3.3-19 Summary of Alternative 5 Visual Quality Impacts

Key Observation Point	*Existing Average Quality(1)*	*Resulting Predicted Visual Quality(1)*	*Degree of Visual Quality Change*
KOP 1 (IN-1): Interstate 5 Southbound	Moderate	High	Moderately Improved Quality
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderately Low	Moderately High	Moderately Improved Quality
KOP 3 (NM-2): Sports Arena and Rosecrans North Midway Sub-Area	Low	Moderately Low	Slightly Improved Quality
KOP 4 (CM-2): Midway Drive and OTC Site 2 in Central Midway Sub-Area	Low	Moderately High	Major Quality Improvement
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	Moderately High	Moderately High	No Change
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	Moderately High	Low	Major Lowered Quality
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	Moderately High	Moderate	Slightly Lowered Quality
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 9 (NP-3): Altamirano and Presidio Drive in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 10 (CH-2): Hayden and Linwood in Central Mission Hills Sub-Area	High	Moderate	Moderately Lowered Quality

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

No existing visual assets would be removed by the project. Based on Table 3.3-19, Figure 3.3-6, and as displayed in KOPs 1, 2, 3, 4, and 5 for areas south, southwest, west, northwest, and north, a positive impact would occur. Alternative 5 would increase the existing moderate and low visual quality to moderately high and moderate resulting in a slight positive. The visual quality of areas to the northeast, east, and southeast, as shown on KOPs 6 through 10 and in Figure 3.3-6, and Tables 4.9-1 through 4.9-10 in Appendix F, would be impacted. Therefore, Alternative 5 would have a significant (moderately high) impact to visual quality.

Aesthetics

- Would the amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, be removed, altered, or demolished?
  - **Response:** No. Impacts to community character would be the same as described for Alternative 2, but the density and scale of development under Alternative 5 is greater. Alternative 4 also involves the consolidation of transit functions on OTC, but these functions already exist in the community. Therefore, there would be a less than significant (moderately low) impact on community character under Alternative 5.
- Would any substantial amount of natural open space be graded or developed?

- **Response:** No. No open space exists OTC, and no impacts to landform quality would occur from grading or development. Therefore, there would be a less than significant impact to landform quality under Alternative 5.

- Would proposed structures in natural open space areas be effectively integrated into the aesthetics of the site through appropriate design?
  - **Response:** No open space exists on OTC.
- Would a degree of contrast occur between proposed features and existing features that represent the area's valued aesthetic image?
  - **Response:** Yes. Impacts to aesthetics would be the same as described for Alternative 2, but the scale and density of Alternative 5 is greater and will present a higher contrast between the existing features of the AVE. The consolidated transit functions on OTC already exist within the AVE and adjacent to OTC, and thus there would not be a high degree of contrast due to the transit uses. Therefore, would be a beneficial impact to aesthetic quality under Alternative 5.
- Would the degree to which a proposed zone change result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements?
  - **Response:** Yes. Impacts would be similar to those described for Alternative 2, but the density of development under Alternative 5 is greater, so the degree of change would be greater. The consolidation of transit functions under Alternative 5 does not present a high degree of change from the style or image of the area, as they already exist in the AVE and are located adjacent to OTC. Therefore, there would be significant impacts related to the degree of change under Alternative 5.
- Would the degree to which the project contributes to the area's aesthetics, applicable guidelines, or regulations be impacted?
  - **Response:** Yes. The impact to future community character and goal attainment within local community plan would be the same as Alternative 2, with the scale and density of the development being greater. Therefore, a similar beneficial impact would occur under Alternative 5 to future community character.

Therefore, Alternative 5 would have a less than significant impact on aesthetics.

Obstruction of Views

- Would an impact to the nature and quality of recognized or valued views occur including features such as topography, man-made or natural features of visual interest, and resources such as mountains or the ocean?
  - **Response:** Yes. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect views from a scenic highway, corridor, or parkway?
  - **Response:** Yes. The impacts to eligible scenic highways would be similar but slightly greater than those described for Alternative 2. Therefore, Alternative 4 would have a less than significant impact (moderate) on scenic highways.
- Would the extent of a view obstruction (e.g., total blockage, partial interruption, or minor diminishment) block existing views?

  - **Response:** Yes. Refer to viewing scenes and view quality sections above.
- Would the project negatively affect recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single or a fixed vantage point?
  - **Response:** Yes. Refer to viewing scenes and view quality sections above.

Therefore, Alternative 5 would have significant impacts related to obstructing views.

Shade and Shadow

The shadow analysis was completed for December 21st and June 20th. The winter solstice results were shown in Figure 4.17-3 and the summer solstice results were shown in Figure 4.17-5 in Appendix F. Since Alternative 5 is proposed to have less intense development than Alternative 4, the potential shadow affects would also be anticipated to be less than Alternative 4, but greater than Alternatives 2 and 3. Therefore, the potential shade and shadow effects would be less than significant under Alternative 5.

Light and Glare

Alternative 5 would result in similar, though greater, impacts to light and glare as described for Alternative 2. Therefore, Alternative 5 would result in significant impacts to light and glare.

Impact Conclusion

Based on the analysis presented above, Alternative 5 would have a significant impact to visual resources.

3.3.4.8 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No potential monitoring measures or potential mitigation were identified for visual resources under any of the Proposed Action Alternatives. Additionally, because Alternative 1 has no impact to visual resources, no management practices are proposed. For Alternatives 2 through 5, it is too early in the planning process for decisions on design treatments for the Proposed Action Alternatives. This analysis assumes that the future design and engineering process would result in well-designed and organized architecture that could be refined to minimize visual quality and view quality impacts. The refined site plans would produce spaces that would encourage a gradational range of private, semi-private, secured, semi-public, and fully public spaces that would be an asset to the project, the Navy, and the broader San Diego region.

It is also assumed that industry level BMPs for wayfinding, landscape architectural design, park design, and circulation planning would all be done for Alternatives 2 through 5. The focus of management practices and guidelines presented below focus not on the detailed design of the development, but upon the factors that would help to minimize the visual and view quality impacts of Alternatives 2 through 5. The following management practices could be considered as part of a formal set of design guidelines that would evolve into development requirements, assured by design and site planning review by the Navy and appropriate local or state entities.

Proposed Management Practices

- <u>VIS MGMT-1</u>. *Limitations to Avoid Silhouetting against the Ocean Horizon.* Any efforts that can be done to limit the number of buildings that are silhouetted against the horizon line of the Pacific Ocean would be instrumental in lowering the adversity of view impacts. The ability to step down buildings with perhaps some buildings still piercing the horizon line would be an alternative to consider that would minimize this impact. A single tower or multiple tall towers that break this line without a transition of other buildings around it that are shorter focuses the attention on a stark contrast in scale change. Specific areas of concern include the northwest views from North, Central and South Mission Hills sub-areas looking towards the Pacific Ocean to the west. If the north end of OTC Site 1 is tapered and pulled back from this location, many public and private views would still see the Pacific Ocean to the west and northwest, although much of the view may still be blocked by buildings. This proposed management measure could reduce impacts to the following KOPs:

  - KOP 7 as seen from Old Town Avenue
  - KOP 8 as seen from Presidio Park
  - KOP 9 as seen from Altamirano in North Mission Hills
  - KOP 10 as seen from Hayden/Linwood from Central Mission Hills

- VIS MGMT-2. *Height Limitation to Avoid Silhouetting against the Sky*. A building that extends above the top of landforms from various viewpoints would be more impactful than a building that is low enough to see landforms to the west (Cabrillo Point and the Point Loma Peninsula as seen from the east) and to the east (Mission Hills/Presidio and North Mission Valley landforms as seen from the west). It would not be possible to avoid sky silhouetting in all areas of the viewshed. Only those viewing locations at higher elevations would be positively affected by this change. Areas of concern would include buildings seen from the Midway District area around Sports Arena, Rosecrans, and Midway. This proposed management measure could reduce impacts to the following KOPs:
  - KOP 3 as seen from Sports Arena Boulevard and Rosecrans Street
  - KOP 7 as seen from Old Town Avenue
  - KOP 8 as seen from Presidio Park
  - KOP 9 as seen from Altamirano in North Mission Hills
  - KOP 10 as seen from Hayden/Linwood from Central Mission Hills

- VIS MGMT-3. *Stepping Down Building Heights to Adjacent Areas*. If some buildings were kept tall and pierced the ocean's horizon line or those of adjacent landforms, it would still be effective to lower the overall sense of scale by stepping down buildings in all directions. This proposed management measure could reduce impacts to the following KOPs:
  - KOP 3 as seen from Sports Arena Boulevard and Rosecrans Street
  - KOP 6 as seen from Old Town State Park
  - KOP 7 as seen from Old Town Avenue
  - KOP 8 as seen from Presidio Park
  - KOP 9 as seen from Altamirano in North Mission Hills
  - KOP 10 as seen from Hayden/Linwood from Central Mission Hills

- VIS MGMT-4. *View Corridors to be Kept Open*. Making a tower taller and creating gaps between other buildings may resolve some view corridor problems. However, what may allow some view corridors to be more open may force the bulk of the massing to another location that may increase the view blockage in another view corridor. But the San Diego sub-region has specific viewing locations with public and major private views in known areas. It has clear sub-regionally important viewing scenes that are most visible to these viewing locations. So, with some level of effort, it would be possible to find the best locations for building gaps and building orientation. The important viewing scenes of greatest concern tend to be from the northeast looking to the southwest with views of San Diego Bay, Coronado, Cabrillo Point, and the Pacific Ocean. This proposed management measure could reduce impacts to the following KOPs:

- KOP 7 as seen from Old Town Avenue
- KOP 8 as seen from Presidio Park
- KOP 9 as seen from Altamirano in North Mission Hills

- VIS MGMT-5. *Centralized Massing to Minimize the Number of Buildings*. Many of the alternatives have a number of building towers. These narrow but tall buildings tend to make the complex look like a city downtown instead of a major complex of related buildings. In addition, the offsets of buildings that are not aligned with each other can contribute to more of the corridors being blocked. This would be like a forest of trees that are not aligned with each other compared to an agricultural orchard where views are obstructed through certain viewing angles, but not at all from other angles. To avoid this phenomenon, less towers that are more massive in bulk and that are aligned with the northeast to southwest corridor alignment could improve the opening of view corridors and lower the sense of scale that the multiple buildings may be exaggerating. This proposed management measure could reduce impacts to the following KOPs:
  - KOP 3 as seen from Sports Arena Boulevard and Rosecrans Street
  - KOP 6 as seen from Old Town State Park
  - KOP 7 as seen from Old Town Avenue
  - KOP 8 as seen from Presidio Park
  - KOP 9 as seen from Altamirano in North Mission Hills

- VIS MGMT-6. *Conceal or Integrate Parking Garages.* Looking from the west side of OTC Site 2 or from many parts of OTC Site 1, the presence of parking structures would not be significant of a visual quality issue. This assumes that parking structures do not allow for large openings in the elevations that allow a person to see parked cars and hanging lights and utility piping. A lower parapet style wall to conceal parked cars and a brow from the upper floor are both essential to limit visual penetration into the structure and vehicle light and parking garage lighting to spill out. The exterior materials must be made to relate to the adjacent building elevations and materials. The use of a vertical perforated screens or patterned laser cut metal panels or offsetting planes that allow air and light in, but that obscure clear views in would be positive. This proposed management measure could minimize impacts to the following KOPs:
  - KOP 1 as seen from southbound Interstate 5 traffic
  - KOP 4 as seen from Midway Drive
  - KOP 7 as seen from Old Town Avenue
  - KOP 9 as seen from Altamirano in North Mission Hills

- VIS MGMT-7. *Maintain Horizontal Banding and Fenestration on Buildings.* It is common for architecture to portray dynamic vertical elements to accentuate the overall scale and iconic power of the building. However, the overall structure of tall buildings is already strongly vertical. Horizontal banding and fenestration that sets each floor as a horizontal design element helps to reduce the apparent size of the building.
  - This proposed management measure could reduce impacts to all KOPs

- VIS MGMT-8. *Integrate and Connect a Series of Plazas, Streets and Spaces.* A strong foundation of an elevated or terraced set of open-air spaces at the ground levels of buildings could make the project feel as though it is a campus-like setting instead of a series of buildings and streets like many downtown areas. This space would also help in creating and maintaining some of the view corridors across OTC. This proposed management measure could minimize impacts to the following KOPs:

- KOP 7 as seen from Old Town Avenue
- KOP 9 as seen from Altamirano in North Mission Hills
- KOP 10 as seen from Hayden/Linwood from Central Mission Hills

Management Measures for Lighting Impacts

- VIS MGMT-9. Exterior lighting could be architecturally integrated with the character of all structures, energy-efficient, and shielded or recessed so that direct glare and reflections would be confined, to the maximum extent feasible, within the boundaries of OTC.
- VIS MGMT-10. Obtrusive light could be minimized by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and light required for the development could be directed downward to minimize spill over onto adjacent properties and reduce vertical glare or up-lighting.
- VIS MGMT-11. The project could be required to meet the lighting standards contained in the CALGreen Code for green building standards. This code is issued by the Building Standard Commission of the California Department of General Services.
- VIS MGMT-12. A lighting plan consistent with the U.S. Green Building Council's LEED Green Building Rating System requirements could be developed. The project could achieve at least the U.S. Green Building Council's LEED v4 Silver certification. Consistency with LEED requirements could reduce both the generation of exterior light and the potential for light trespass to affect off-site areas.
- VIS MGMT-13. Light-emitting diode light fixtures could be used for all interior and exterior lighting and fixtures and could be selected based on architectural aesthetic, efficiency, maintenance, and glare control.
- VIS MGMT-14. Professionally recommended lighting levels could be determined for each activity area to prevent over-lighting and reduce electricity consumption.
- VIS MGMT-15. Shielded fixtures with efficient light bulbs could be used in the parking lot to prevent any glare and light spillage beyond the property line. Shielded fixtures would also help in preventing light pollution of the dark sky.
- VIS MGMT-16. To protect spill over on Interstate 5 and the Pacific Highway, luminaries would be shielded, reduced in intensity, or otherwise protected from view to reduce the brightness of a light source within 10 degrees from a driver's normal line-of-sight.
- VIS MGMT-17. The maximum measurable luminance of the illuminated building façade would not exceed 40 candela per square meter. Additionally, an area weighted average of field measurements would not exceed 10 candela per square meter for any single contiguous façade area greater than 7,500 square feet in area.

Management Measures for Glare Impacts

- VIS MGMT-18. Glass used in building façades could be anti-reflective or treated with an anti-reflective coating in order to minimize glare.
- VIS MGMT-19. The following treatments would not be allowed as part of the Proposed Action Alternatives materials:
  - Reflective glass that exceeds 50 percent of any building surface and none on the bottom three floors

- Mirrored glass
- Black glass that exceeds 25 percent of any surface of a building
- Metal building materials that exceed 50 percent of any street facing surface
- Exposed concrete that exceeds 50 percent of any building

The following use of building materials would be encouraged:

- natural stone
- galvanized metal
- matte or low gloss painted materials including steel, metal, and wood
- precast concrete panels with low reflectivity
- clear or lightly tinted glass
- brushed stainless steel versus polished stainless steel
- anodized aluminum
- composite panels that are not pure or bright white

3.3.4.9 Summary of Project Impacts Before and After Management Practices

Table 3.3-20 and Table 3.3-21 provides a summary of the identified impacts for the broad range of potential impacts related to the No Action Alternative and the five action alternatives. The table shows the impact level prior to the proposed management measures being implemented, as well as the impact levels with the proposed management measures in place. The No Action Alternative and Alternative 1 fall in the same general range of impacts. Alternative 2 and Alternative 3 are in the next grouping of impacts, all falling below a level of significance with implementation of the proposed management practices. Alternatives 4 and 5 still show some significant impacts after implementation of proposed management practices.

3.3.4.10 Summary of Effects and Conclusions

Based on the analysis presented above, there would be no impacts to visual resources from the No Action Alternative and Alternative 1.

Alternatives 2 and 3 both have significant view quality impacts. However, with the implementation of the proposed management measures, the impacts would be lowered to less than significant. Alternatives 4 and 5 would result in significant impacts to view quality impacts. These impacts would be reduced by the implementation of the proposed management measures, but they would not cause all impacts to become less than significant.

The buildings and massing of Alternatives 4 and 5 are high and the level of development creates a massing that would permanently and unavoidably create a significant impact on the AVE. The proposed management measures for Alternatives 4 and 5 would help lower the view quality impacts, but impacts would remain significant and unavoidable.

Table 3.3-20 Impact Summary of Alternatives Pre- and Post-Management Practices

Alternative Impacts	*View Quality Impact*	*Scenic Highway Impact*	*Visual Quality (West Side) Impact*	*Visual Quality (East Side) Impact*	*Landform Quality Impact*	*Aesthetic Quality Impact*
No Action Alternative	-	-	-	-	-	-
Without management measures	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
With management measures	No Change	No Change	No Change	No Change	No Change	No Change
Alternative 1	-	-	-	-	-	-
Without management measures	Less than Significant (Low)	Slight Beneficial	Slight Beneficial	Slight Beneficial	No Impact	Slight Beneficial
With management measures	No Change	No Change	No Change	No Change	No Change	No Change
Alternative 2	-	-	-	-	-	-
Without management measures	Significant Impact (Moderate High)	Less than Significant (Moderate)	Slight Beneficial	Less than Significant (Moderate)	No Impact	Slight Beneficial
With management measures	No Change	No Change	No Change	No Change	No Change	No Change
Alternative 3	**-**	**-**	**-**	**-**	**-**	**-**
Without management measures	Significant Impact (Moderate High)	Less than Significant (Moderate)	Slight Beneficial	Slight Beneficial	No Impact	Slight Beneficial
With management measures	Less than Significant (Moderate)	Less than Significant (Moderate Low)	No Change	No Change	No Change	No Change
Alternative 4	**-**	**-**	**-**	**-**	**-**	**-**
Without management measures	Significant Impact (High)	Significant Impact (Moderate High)	Slight Beneficial	Significant Impact (Moderate High)	No Impact	Slight Beneficial
With management measures	Significant Impact (Moderate High)	Less than Significant (Moderate)	No Change	No Change	No Change	No Change
Alternative 5	-	-	-	-	-	-
Without management measures	Significant Impact (High)	Significant Impact (Moderate High)	Slight Beneficial	Significant Impact (Moderate High)	No Impact	Slight Beneficial
With management measures	Significant Impact (Moderate High)	Less than Significant (Moderate)	No Change	No Change	No Change	No Change

Legend: - = no data for cell.

Note: Categories for Impact Levels: Slight Beneficial; No Impact; Low Adversity; Moderately Low Adversity; Moderate Adversity; Moderately High Adversity; High Adversity. Moderately high adversity and high adversity are considered a significant impact.

Table 3.3-21 Impact Summary of Alternatives Pre- and Post-Management Practices

Alternative	*Existing Community Character (West Side) Impact*	*Existing Community Character (East Side) Impact*	*Future Community Character Impact*	*Shade and Shadow Impact*	*Light and Glare Impact*
No Action Alternative	-	-	-	-	-
Without management measures	Less than Significant (Low)	Less than Significant (Low)	Less than Significant (Low)	No Impact	No Impact
With management measures	No Change	No Change	No Change	No Change	No Change
Alternative 1	-	-	-	-	-
Without management measures	None	Less than Significant (Low)	Slight Beneficial	No Impact	No Impact
With management measures	No Change	No Change	No Change	No Change	No Change
Alternative 2	-	-	-	-	-
Without management measures	Less than Significant (Low)	Less than Significant (Moderate Low)	Slight Beneficial	Less than Significant (Low)	Significant Impact (Moderate High)
With management measures	No Change	No Change	No Change	No Change	Less than Significant (Moderate)
Alternative 3	-	-	-	-	-
Without management measures	None	Less than Significant (Moderate Low)	Slight Beneficial	Less than Significant (Low)	Significant Impact (Moderate High)
With management measures	No Change	No Change	No Change	No Change	Less than Significant (Moderate)
Alternative 4	-	-	-	-	-
Without management measures	Low	Less than Significant (Moderate Low)	Slight Beneficial	Less than Significant (Moderate)	Significant Impact (High)
With management measures	No Change	No Change	No Change	No Change	Less than Significant (Moderate)
Alternative 5	-	-	-	-	-
Without management measures	Low	Less than Significant (Moderate Low)	Slight Beneficial	Less than Significant (Moderate)	Significant Impact (High)
With management measures	No Change	No Change	No Change	No Change	Less than Significant (Moderate)

Legend: - = no data for cell.
Note: Moderately high and high are considered a significant impact.

3.4 Land Use

The term land use refers to real property classifications that describe either natural/undeveloped conditions or various types of human/developed uses of a parcel of land. Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. However, there is no nationally recognized convention or uniform terminology for describing land use categories and the meanings of various land use descriptions, labels, and definitions therefore vary among jurisdictions. Properties in a natural state are often described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. Categories often used to describe land uses in a built/developed context include residential, commercial, industrial, agricultural, institutional, and recreational.

3.4.1 Regulatory Setting

This section of the EIS addresses current and planned land uses on OTC and surrounding properties, and considers the regulations, policies, or zoning that may influence or control such land use. The analysis also considers the following planning documents associated with OTC and the surrounding area:

- Naval Base Point Loma OTC Area Development Plan (Navy, 2017)
- Draft Naval Base Point Loma OTC Recapitalization Plan (Navy, 2020c)
- Air Installations Compatible Use Zones (AICUZ) Update for Naval Air Station North Island and Naval Outlying Landing Field Imperial Beach (Navy, 2011a)
- City of San Diego General Plan (City of San Diego, 2013a, 2015)
- Midway-Pacific Highway Community Plan (City of San Diego, 2019a)
- Old Town San Diego Community Plan (City of San Diego, 2018b)
- Uptown Community Plan (City of San Diego, 2019b)
- 2019 Federal Regional Transportation Plan (RTP) (SANDAG, 2019b)
- 2021 Regional Plan currently under development (SANDAG, 2019c)
- Airport Land Use Compatibility Plan (Airport Land Use Commission, 2014)
- Port Master Plan (Port of San Diego, 2017a)

3.4.2 Affected Environment

3.4.2.1 Region of Influence

The Navy controls and manages land use within OTC Site 1 and OTC Site 2. Relevant local jurisdictions (such as City of San Diego, Port of San Diego, San Diego International Airport, or the California Department of Transportation) control and manage land use planning in areas surrounding OTC. The ROI for the analysis of land use conditions and potential project effects in this EIS encompasses OTC Site 1 and OTC Site 2 and properties within 0.25 miles of the OTC boundaries, as shown in Figure 3.4-1. In addition, certain alternatives would potentially impact traffic flows to the Port of San Diego and San Diego International Airport (refer to Section 3.2, *Transportation*, for additional information), so those areas and their associated land use planning documents are also included in the analysis.

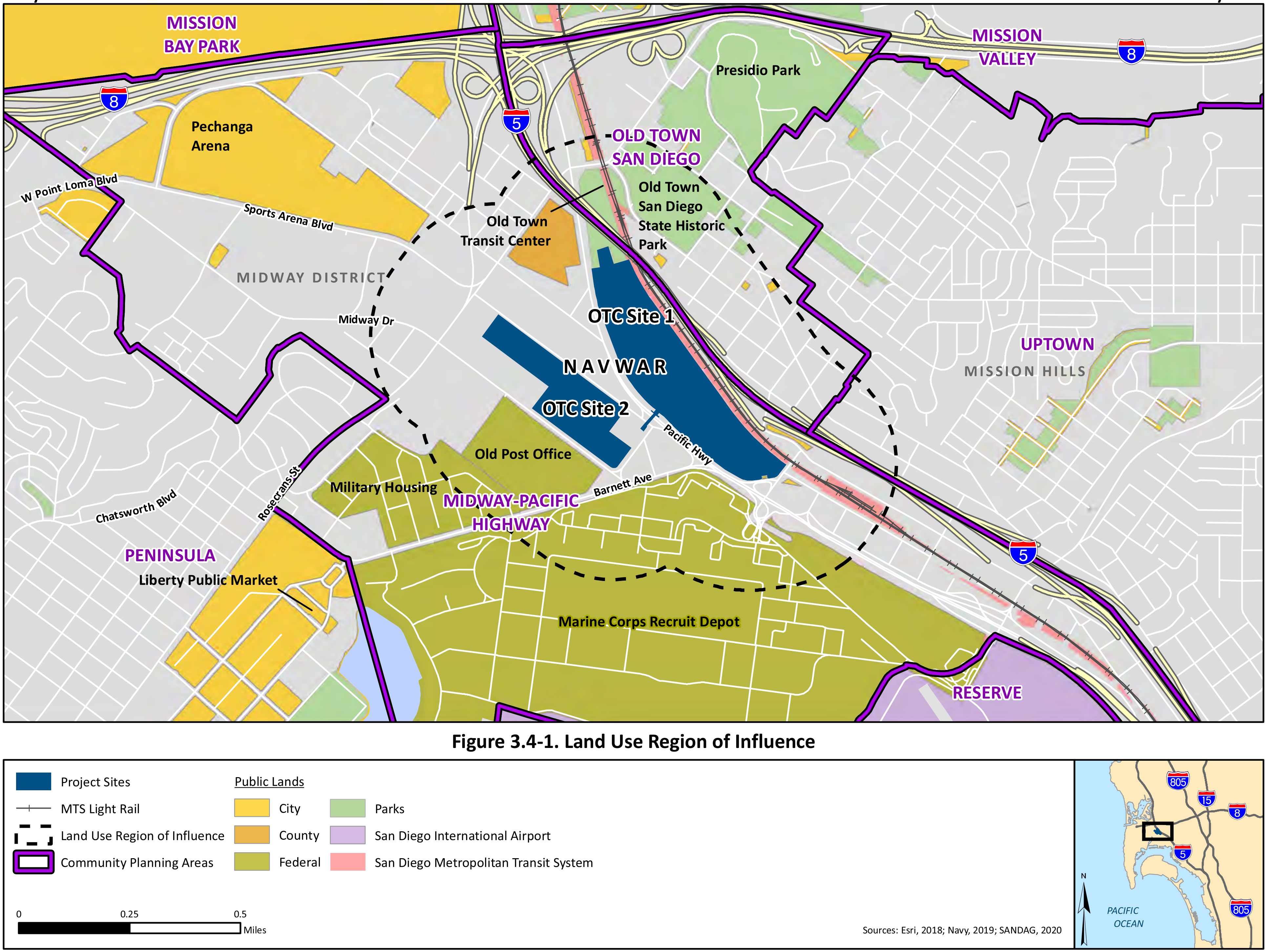


Figure 3.4-1. Land Use Region of Influence

3.4.2.2 Plans and Policies

OTC Site 1 and OTC Site 2 are both used for military activities, comprising 70.5 acres of mainly improved, federally owned land. The Navy's land use planning document for this location is the Naval Base Point Loma OTC Area Development Plan. Adjoining lands, however, are subject to local land use programs, policies, and plans. The City of San Diego plans its land use via a state-required general plan, community plans, and a local coastal plan for property within the coastal zone. The San Diego International Airport adopted a master plan and Local Coastal Plan for the tidal and submerged lands outside of federal jurisdiction in San Diego Bay. For transportation, SANDAG functions as the regional planning authority and produces a regional plan every 4 years, with the most recent being adopted in 2019. The next update, the 2021 Regional Plan, is currently under development. The following subsections describe the relevant plans and policies that pertain to local land uses in the ROI and represent the existing land use planning context against which the Proposed Action Alternatives will be evaluated to identify potential effects.

Naval Base Point Loma OTC Area Development Plan

The 2017 Naval Base Point Loma OTC Area Development Plan describes the needs of NAVWAR at OTC. It aligns with the vision crafted as a part of the Naval Base Point Loma Installation Development Plan: "An adaptive, state-of-the-art installation with efficient, attractive, and sustainable connected campuses that support diverse missions." The focus of the OTC Area Development Plan is on redevelopment of OTC to maximize the functional use of available land area and to provide facilities that are suited for the current and future mission. The plan validates user functional requirements and recommends the recapitalization of some of the existing facilities at OTC in order to modernize them and fully meet NAVWAR's mission. This became the basis of the Naval Base Point Loma OTC Recapitalization Plan discussed in the next section. The plan also acknowledges the potential for a public-private development agreement and recommends a follow-on study to further evaluate the feasibility and interest from private developers.

The Area Development Plan is the Navy's land use plan for OTC and the requirements identified must be addressed by the project alternatives to be considered viable by the Navy.

Draft Naval Base Point Loma OTC Recapitalization Plan

The Draft Naval Base Point Loma OTC Recapitalization Plan builds on the OTC Area Development Plan and provides preliminary floor plans and proposed phasing for implementation. The Recapitalization Plan is the basis of Alternative 1 in this EIS.

Naval Air Station North Island AICUZ Update

An AICUZ is a document that provides guidance to protect the health, safety, and welfare of those living on and near a military airfield while preserving the operational capability of the airfield. The Navy uses components of the AICUZ, such as noise contours, Airfield Safety Zones, and imaginary surfaces, to identify and manage compatible use zones. The safety zone associated with the approach/departure clearance surface for Runway 18/36 at Naval Air Station North Island extends across San Diego and San Diego International Airport to overlay both OTC Site 1 and OTC Site 2. Therefore, OTC falls within the ROI for the AICUZ Update for Naval Air Station North Island and Naval Outlying Landing Field Imperial Beach. Operationally, the portion of the approach/departure that overlays OTC is not currently being used by the Navy as the arrival and departure flight tracks have been modified to fly over San Diego Bay or the Pacific Ocean and avoid crossing over the San Diego International Airport. The noise and safety zones for

Naval Air Station North Island are contained within San Diego Bay, the Pacific Ocean, Naval Air Station North Island, and a portion of the City of Coronado, and do not affect OTC.

The imaginary surfaces associated with Naval Air Station North Island are defined by the CFR title 14, part 77 and are managed by the FAA which will require a Notification of Proposed Construction of Alteration on Airport Part 77 to be filed to determine if a hazard is created and if mitigation or minimization measures are required.

City of San Diego General Plan

The general plan provides policy guidance intended to balance the needs of a growing population while enhancing quality-of-life for current and future residents. It provides a strategy, called the "City of Villages", for how the city can enhance its many communities and neighborhoods as the planned growth occurs over time. The plan is presented in ten elements:

- Housing
- Land use and Community Planning
- Mobility
- Economic Prosperity
- Public Facilities, Services, and Safety
- Urban Design
- Recreation
- Historic Preservation
- Conservation
- Noise

These elements provide a comprehensive road map for the City of San Diego's growth to the year 2030 or beyond. The Housing Element, Land Use and Community Planning Element, and Recreation Element are of particular relevance.

Housing Element

An overarching City of San Diego goal is "To create a comprehensive plan with specific measurable goals, policies and programs to address the city's critical housing needs and foster the development of sustainable communities in support of the State's Greenhouse Gas Emission reduction targets, consistent with the region's sustainable communities' strategy." The City of Villages strategy helps San Diego meet these goals by encouraging development in central core areas that can leverage regional transit systems, increase the number of people walking to work, and provide affordable, high quality housing to all income levels. The Housing Element is organized around five primary goals, with support policies and programs:

- provision of an adequate site inventory and new construction capacity
- maintenance and conservation (including preservation of existing low-income housing and rehabilitation of existing housing stock) of hosing stock
- reduction of governmental constraints that are no longer necessary
- provision of affordable housing opportunities

- implementation of administrative goals (including fair share and community balance, use of redevelopment set-aside funds, reduction of housing discrimination, and energy conservation)

The “City of Villages” strategy focuses growth into mixed-use villages that are linked to a transit system and promotes a synergy between jobs and housing through the expansion of regional transit networks linking employment centers to residential communities. Through the community plan update process, the promotion of infill and mixed-use village-type development will provide for socioeconomic equity (allowing a variety of household incomes to collocate proximate to employment and commercial amenities), protect environmental and agricultural resources (by redirecting development patterns from suburban sprawl to urban villages), and will encourage efficient and sustainable development patterns, in line with the goals of California Senate Bill 375 and the Sustainable Communities Strategy.

Land Use and Community Planning Element

The general plan’s Land Use and Community Planning Element begins to implement the City of Villages strategy by encouraging each of the 55 separate community plans to update their land use plans to provide adequate housing for the region’s growing population and to limit prime industrial land to industrial uses only. Figure LU-1 in this element identifies the areas around OTC as having a high propensity to function as a ‘Village.’ The element also identifies general plan land use categories and recommends more detailed community plan designations. Additionally, the element provides guidance on community plan structure and amendment process; coastal resources; airport land use compatibility; and environmental justice.

OTC falls within the Midway-Pacific Highway Community Planning Area, which has its own adopted community plan where more detailed land use designations are described. The Midway-Pacific Highway Community Plan is further described later in this section. Airport land use compatibility and coastal resources are also discussed separately further down in this section.

Mobility Element

The Mobility Element identifies goals and policies to improve mobility (walk, bicycle, transit, and automobile) through development of a balanced, multi-modal transportation network. The element acknowledges the interconnectedness of this goal with the Land Use and Community Planning Element, as well as the Federal RTP.

Urban Design Element

The Urban Design Element identifies goals and policies to guide physical development toward a desired image that is consistent with the social, economic and aesthetic values of the City of San Diego. The element is structured around four goals:

- contribute to the qualities that distinguish San Diego as a unique living environment
- build upon our existing communities
- direct growth into commercial areas where a high level of activity already exists
- preserve stable residential neighborhoods

These goals are expanded upon within the Midway-Pacific Highway Community Plan discussed later. The aesthetic aspects are further discussed in Section 3.3, *Visual Resources*.

Economic Prosperity Element

The Economic Prosperity Elements fundamental goal is to increase wealth and the standard pf living of all San Diegans with policies that support a diverse, innovative, competitive, entrepreneurial, and sustainable local economy. It includes goals and policies associated with aeras designated as industrial land uses, commercial land uses, and employment centers, employment development, community investment, and visitor industries. These goals and policies are expanded upon within the Midway-Pacific Highway Community Plan discussed later. Economic development is further discussed in Section 3.5, *Socioeconomics*.

Public Facilities, Services, and Safety Element

The public facilities, services, and safety element identifies goals and policies to provide the public facilities and services needed to serve the existing population and new growth. The element acknowledges deficiencies within existing urbanized communities and identified the City of San Diego and the current population is responsible to fund existing deficiencies, and that new development will pay its proportional fair share of public facilities costs. The element provides guidance on 14 different facility types ranging from Fire and Police to Schools, as well as utility infrastructure. These topics are further discussed in Sections 3.8, *Public Health and Safety*, 3.10, *Public Services*, and 3.11, *Infrastructure*.

Recreation Element

The Recreation Element identifies goals and policies to preserve, protect, acquire, develop, operate, maintain, and enhance public recreation opportunities and facilities throughout the City of San Diego for all users. The City of San Diego recognizes the need to distribute park investments equitably to all communities and has written policy into the Recreation Element to provide park and recreation facilities citywide. The city has established a standard of 2.8 acres of parkland for every 1,000 residents within a community. New developments are required to either provide the required parkland commensurate with any increase in residents as part of their project or contribute to acquisition and development of parkland elsewhere within the community.

The Midway-Pacific Highway Community Plan further defines the existing parkland within the plan area, as well as planned parkland based on future development assumed as part of implementing the community plan and is discussed further later.

Conservation Element

The Conservation Element identifies goals and policies to become an international model of sustainable development and conservation. To provide for the long-term conservation and sustainable management of the rich natural resources that help define the City of San Diego's identity, contribute to its economy, and improve its quality-of-life. The protection of natural resources is further discussed in Section 3.16, *Biological Resources*. The protection and management of water resources is further discussed in Section 3.15, *Water Resources*. GHG emissions are further discussed in Sections 3.1, *Air Quality* and 3.2, *Transportation*. The protection of visual access to sub-regional scenic resources is further discussed in Section 3.3, *Visual Resources*.

The Midway-Pacific Highway Community Plan further describes sustainable development practices by directing future development into districts and villages that are served by transit as further described later.

Noise Element

The Noise Element identifies goals and polices to protect people living and working in the City of San Diego from excessive noise. San Diego International Airport management of airspace and noise is briefly described later and in more detail in Section 3.12, *Airspace*. A more in-depth discussion of noise is provided in Section 3.13, *Noise*.

Historic Preservation Element

The Historic Preservation Element identifies goals and policies to guide the preservation, protection, restoration and rehabilitation of historical and cultural resources and maintain a sense of the city. To improve the quality of the built environment, encourage appreciation for the city's history and culture, maintain the character and identity of communities, and contribute to the city's economic vitality through historic preservation. These topics are further discussed in Section 3.6, *Cultural Resources*.

Midway-Pacific Highway Community Plan

The Midway-Pacific Highway community is a centrally located urban community in close proximity to downtown San Diego, Mission Bay, San Diego Bay, area beaches, and the San Diego River. From its historic beginnings as part of the delta of the San Diego River to the rise of the military and aviation industry in the 1920s, the neighborhood has played a role in San Diego's growth and transformation. The development of the Naval Training Center and the MCRD in the 1920s became the cornerstones of the community. The aviation industry (Ryan Aeronautical Company) expanded development in the 1930s and the Consolidated Aircraft plant (the three large NAVWAR buildings) during WWII further expanded the industrial character of the area. Haphazard development of warehouses, commercial, and industrial buildings continued through the 1950s and 1960s. The construction of Interstates 5 and 8 shifted the area towards automobile-oriented uses, including commercial strip and shopping center development. The Sports Arena was constructed in 1966 and increased the community's usage by visitors and tourists. The development since the 1960s has maintained the same land use patterns.

The Midway-Pacific Highway Community Plan extends the City of San Diego's General Plan policies within the context of Midway-Pacific Highway Community Plan area. The policies identified complement the citywide goals and policies and address community needs. The community plan is consistent with the City of San Diego General Plan, and the two documents work together to establish the framework for growth and development in the Midway-Pacific Highway community. The community plan also incorporates strategies from the city's Climate Action Plan to implement bicycling, walking, transit, and land use strategies that promote increased capacity for transit-supportive residential and employment densities and provide more walking and biking opportunities.

The community plan provides additional capacity for the development of residential and employment uses in proximity to transit and utilizes a multi-modal approach to improving circulation and access throughout the community. The community plan strives to enhance the community's character by improving pedestrian and bicycle access to Mission Bay, the San Diego River, San Diego Bay, Old Town, and downtown San Diego. Improvements to streetscapes, the urban forest and identifying opportunities for small parks, plazas, and courtyards to create a more friendly and active urban environment are also incorporated. The community plan applies to land areas directly to the northwest, west, south, and southeast of OTC Site 1 and fully surrounds OTC Site 2. The community plan continues to designate OTC as Military Use without recommended changes or limitations under planned conditions, recognizing that the city has no regulatory land use authority over federally owned land.

The community plan is organized around villages and districts and has recommended changes to land use and density in the community designed to transform the area from the haphazard collection of predominantly industrial, commercial, and retail uses, into mixed-use villages and districts. The envisioned villages and districts would bring residential uses into the community and provide opportunities to live and work in the Midway-Pacific Highway area while providing easy access to the transit system via the Old Town Transit Center and other planned improvements. To accomplish this, the community plan supports an increase of approximately 24,000 individuals, 10,000 housing units, and nearly 4,400 new jobs over a 30-year planning horizon (2015-2045) as shown in Table 3.4-1. The planned growth for employment and non-residential uses are modest at 29 percent and 3 percent, respectively. However, the planned growth for the number of dwelling units and associated household population is significant at 525 percent and 514 percent, respectively. Currently, OTC is federal property and lands owned by the federal government are not subject to local land use regulations or municipal codes.

The community plan for increase in density was based on continued military use at OTC and the 30-foot height restriction in San Diego Municipal Code Chapter 13 Article 2 Division 5 (Coastal Height Limit Overlay Zone) that is based on the 1972 voter initiative known as Proposition D. Since the community plans publication, the Navy published an RFI for potential mixed-use development on OTC to support new NAVWAR facilities and Measure E was passed to end the 30-foot height limit for new buildings in the Midway District. Future updates to the Midway-Pacific Highway Community Plan would likely include increased densities for mixed-use residential and commercial uses.

Table 3.4-1 Midway-Pacific Highway Community Plan Growth

Growth Area	*Community Plan-Existing (2015)*	*Community Plan-Planned Growth # (%)*	*Community Plan-Future (2045)*
Household Population	4,600	23,660 (514%)	28,260
Employment (Jobs)	15,200	4,370 (29%)	19,570
Residential (Dwelling Units)	1,935	10,155 (525%)	12,090
Non-Residential (SF)	9,800,000	300,000 (3.1%)	10,100,000

Legend: % = percent; SF = square feet.

OTC Site 1 is the primary land area within the Kurtz District, which the community plan has planned as an employment area with military, office, research and development, and complementary residential uses to support and complement the NAVWAR functions. The Kurtz District extends from Interstate 5 west to Pacific Highway and Kurtz Street on the west to Rosecrans Street in the north and Witherby Street in the south as shown in Figure 3.4-2.

Rosecrans Street and Pacific Highway are targeted for design improvements in the community plan, to enhance the pedestrian and bicycle environment and the links to Old Town and downtown San Diego. Improvements at the intersections of Pacific Highway with Barnett Avenue and Witherby Street are also envisioned to improve pedestrian and bicycle access and safety.

OTC Site 2 is within the Dutch Flats Urban Village, which is planned as an employment and residential-focused urban village. Office and research and development space for industries such as defense, high-tech, and clean-tech businesses are envisioned for the area, along with flex and innovation space for other businesses within the Dutch Flats Urban Village. These uses are intended to support and complement NAVWAR while providing opportunities for defense-related research and development, and other similar industries to establish business locations in proximity to transit, downtown San Diego, and the San Diego International Airport.

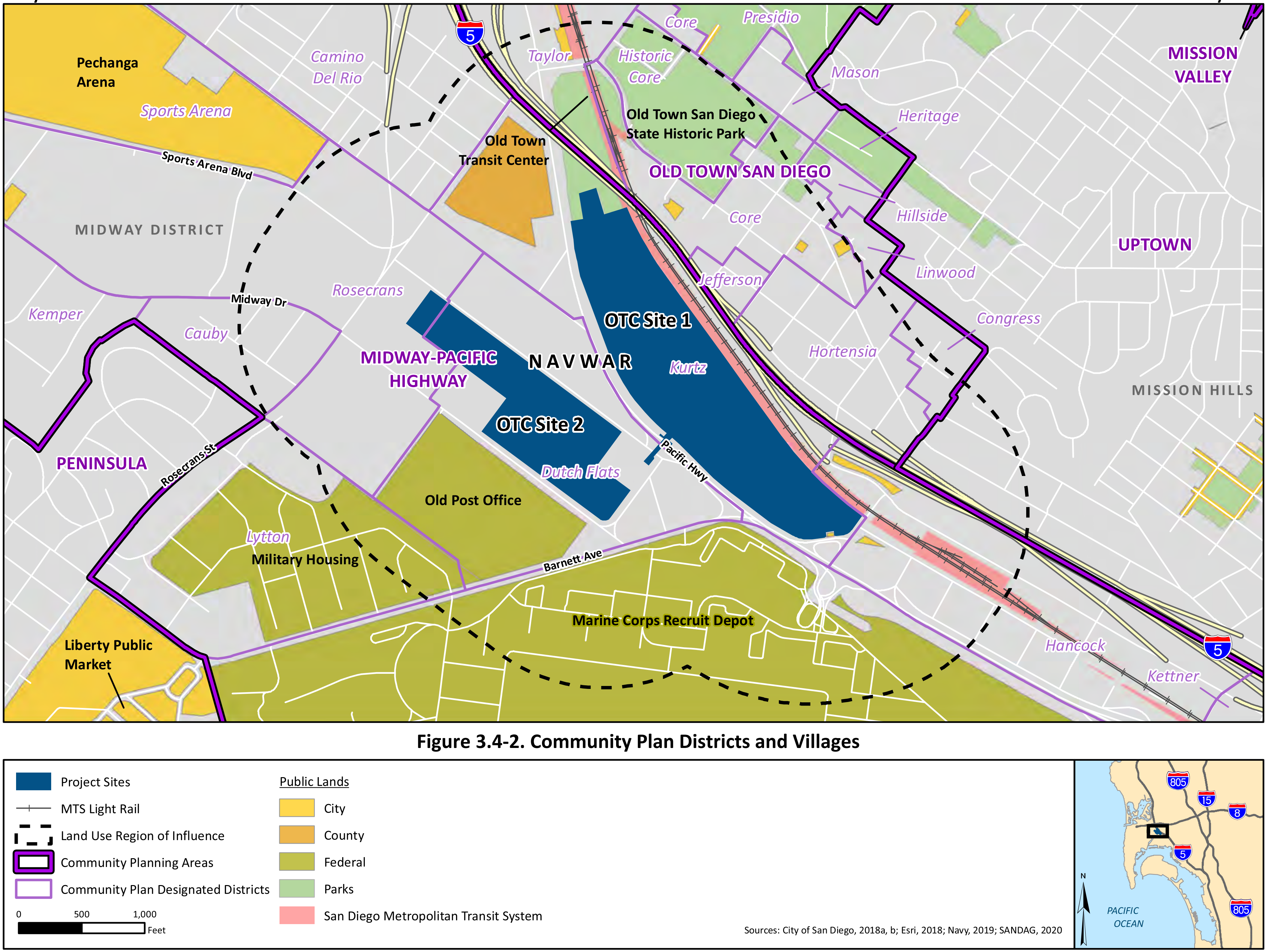


Figure 3.4-2. Community Plan Districts and Villages

The Dutch Flats Urban Village extends from Pacific Highway and Kurtz Street on the east to the edge of the military housing on the west and from Barnett Avenue in the south to the planned Charles Lindbergh Parkway in the north as shown in Figure 3.4-2. Two planned streets, Charles Lindbergh Parkway and Dutch Flats Parkway, would both cross through OTC Site 2. A combination of retail, park, public space, and residential uses are planned within the village. Pedestrian and bicycle infrastructure are also planned to create a walkable, transit-oriented, mixed-use employment village.

Plazas or urban green spaces are planned to function as focal points within the village by providing social and recreation opportunities for residents, employees, and visitors. Improved pedestrian and bicycle facilities along Pacific Highway are intended to facilitate access to the Old Town Transit Center, and the planned addition of a rapid bus station along Sports Arena Boulevard would support transit use by employees, residents, and visitors.

The community plan strategy for parkland is to plan new parks to support future population growth with one park within the Dutch Flats Urban Village and two parks within the Sports Arena Community Village as summarized in Table 3.4-2.

Table 3.4-2 Midway-Pacific Highway Community Plan Parkland

Parkland Inventory	*Community Plan-Existing (2015)*	*Community Plan-Planned New Parkland*	*Community Plan-Future (2045)*
Traditional Parks	0	9.8	9.8
Park Equivalencies	0	13.51	13.51
Joint-Use Sites	0	1.5	1.5
Resource-based Park (portion)	0	3.3	3.3
Community Recreation Center	0	1.75	1.75
Total Acres	0	29.86	29.86
Total Population	4,600	23,660	28,260
Population-based Parkland Requirements (2.8 acres / 1,000 population)	12.88	66.25	79.13
Parkland Deficit	12.88	36.39	49.27
Percentage of Requirement	0%	45%	38%

Legend: % = percent.

Due to limited land availability, the community plan also proposes a significant amount of linear park equivalents along streets in the form of landscaped jogging or separate bike path, seating, trash receptacles, and other improvements. These linear park elements are intended to create a contiguous network of safe pedestrian and bike paths through the Dutch Flats and Sports Arena villages. Pacific Highway is recommended to have a bike path on the east side and a protected cycle track on the east side of the road to create contiguous links to downtown San Diego and to northern parts of San Diego. Even with full implementation of the community plan, the usable park acreage within the plan area is targeted to be 29.88 acres. The standard population-based requirement for the community would be 79.13 acres, so the community plan has a shortfall of 49.27 acres.

The Midway-Pacific Highway Community Plan is the City of San Diego's local land use plan that identifies the location, mix and density of planned land uses that are consistent with the City of San Diego General Plan goals and policies. Evaluating the consistency with, or degree of change from, the planned development identified in the community plan will be the primary basis of the impact analysis.

Old Town San Diego Community Plan

Old Town San Diego has significant historical importance. It is the site of initial settlement in the City of San Diego and the birthplace of the State of California. The historic and cultural features of Old Town are a destination for visitors, which supports the community's retail and restaurant businesses, hotels, and museums. The Old Town San Diego Community Plan provides a vision that preserves and enhances the historical significance and supports a balance between residential and visitor-oriented uses.

The community plan area is divided into eight sub-districts. The Historic Core, Core, Jefferson, and Hortensia sub-districts are wholly within the ROI. Portions of the Taylor, Hillside, Linwood, and Congress sub-districts are within the ROI as well. The sub-districts are defined by their key features, such as the Historic Core (characterized by the state historic park), the Core (retail and commercial-focused in the area beyond the Historic Core), and more mixed-use (Taylor and Hortensia sub-districts) and residential areas (Jefferson, Linwood, Congress, and Mason).

Evaluating indirect impacts, such as growth inducement, will be the primary basis of the impact analysis.

Uptown Community Plan

The Uptown Community Planning Area is located just north of downtown and is comprised of the following neighborhoods: Hillcrest, Mission Hills, Bankers Hill/Park West, University Heights, Middletown, and the Medical Complex. It is bounded on the north by the steep hillsides of Mission Valley, on the east by Park Boulevard and Balboa Park, and on the west and south by Old Town San Diego and Interstate 5. While the community of Uptown contains some of the oldest and most distinct neighborhoods in San Diego, only a small portion of the Middletown neighborhood is within the ROI of the OTC Revitalization project. The community plan and provides a vision that preserves the distinctiveness of the individual neighborhoods which is highly valued by the Uptown community. Centered on San Diego Avenue, this portion of the Middleton neighborhood is characterized by community and neighborhood serving commercial uses and light industrial functions, with residential uses positioned upslope to take advantage of views towards Point Loma, San Diego Bay, and downtown. No major changes are planned within this neighborhood. Pedestrian and bicycle facilities exist along San Diego Avenue and act as connectors from the Five Points area at Washington Street and India Street to Old Town San Diego.

Evaluating indirect impacts, such as growth inducement, will be the primary basis of the impact analysis.

SANDAG's 2019 Federal Regional Transportation Plan

SANDAG functions as the regional planning forum for the 18 member cities and the county. In this role, they provide policy and guidance over a range of topics including regional demographics, land use and growth, economic and finance, public safety, environment, and transportation.

For transportation, SANDAG functions as the regional planning authority and produces a regional plan every 4 years. The 2019 Federal RTP updates the 2015 RTP, while the 2021 Regional Plan is being developed. The 2019 Federal RTP complies with federal requirements for the development of regional transportation plans, achieves a federal air quality conformity finding, and preserves funding for the region's transportation investments.

The 2019 Federal RTP is organized around providing innovative mobility choices and planning to support a sustainable and healthy region, a vibrant economy, and an outstanding quality-of-life for all. This is supported by six policy objectives: habitat and open space preservation; regional economic prosperity;

environmental stewardship; mobility choices; partnerships/collaboration; and healthy and complete communities.

It utilizes the 2050 Growth Forecast that targets approximately 700,000 more people, 408,000 more jobs, and 420,000 more housing units. The population will be 25 percent age 65 and older (currently 15 percent), will continue to become more diverse (increases in Hispanic, Asian, and African American), and 77 percent of the new housing will be apartments, condos, and multi-family dwellings.

Transportation improvements are focused around Transportation System Management and TDM. With the regions shift towards higher density communities within the western third of the county, transportation system improvements will be focused within the Urban Area Transit Strategy boundary. Figure 2.2 in the 2019 Federal RTP, shows the NAVWAR site as a major employment center within the Urban Area Transit Strategy. Transportation system improvements will focus on increasing the percentage of people living and working within 0.5 miles of high-frequency public transit from about 33 percent in 2016 to 55 percent in 2050. The use of Transit Oriented Development, like the Proposed Action Alternatives will be a key strategy. Other system improvements include express lanes, carpool lanes, and transit-only lanes, as well as traditional highway improvements and toll roads. Technological improvements are also included to provide move options and better manage the system. TDM is focused around the use of mobility hubs and access to shared mobility services.

Access to and from San Diego International Airport is also a major target for improvement and two of the four concepts consider a transit center located at OTC.

While evaluation of the transportation improvements is included in Section 3.2, *Transportation*, the evaluation of OTC and its functioning as an employment center, implementation of transit-oriented design, and the ability to provide access to San Diego International Airport will be the focus of the impact analysis.

SANDAG's 2021 Regional Plan

SANDAG's 2021 Regional Plan is currently under development and while it builds on the goals and implementation targets of the 2019 Federal RTP, it is being structured around a program of "5 Big Moves" that include: Complete Corridors, Transit Leap, Mobility Hubs, Flexible Fleets, and a Next Operating System.

Complete Corridors are intended to use technology to help efficiently balance how people use the roadway network for a variety of travel options. These corridors are part of the multi-modal transportation system and include highways and major roads that are connected through technology and managed in real-time to ensure the people and goods move efficiently and safely. Pacific Highway, Rosecrans Street, Sports Arena Boulevard, and Midway Drive could all be candidates for these improvements.

Transit Leap is envisioned to create a complete network of high-speed, high-capacity, frequent transit services that connect major residential areas with employment centers and local attractions. Pacific Highway, Rosecrans Street, Sports Arena Boulevard, and Midway Drive could provide some of these functions.

Mobility hubs interconnect the network and are places where different travel options (walking, biking, transit, and shared mobility) come together. The existing Old Town Transit Center located just north of OTC is one of the regional mobility hubs identified by SANDAG.

Flexible Fleets builds on the popularity of shared mobility services (on-demand rideshare, bikeshare, and scootershare) and adds micromobility (neighborhood electric vehicles), microtransit (15-person shuttle), and last mile delivery via semi- or fully-automated vehicles, e-bikes, drones, and bots. Some of these services would be integrated into the local street and sidewalk system, whereas aspects of the last mile delivery could access courtyards and other semi-private spaces.

Next Operating System upgrades the "brain" of the entire transportation system by using technology and data to connect and manage different modes of transportation (passenger vehicles, buses, ridesharing vehicles, delivery trucks, autonomous vehicles, bikes, scooters, and more) to improve overall efficiency and accessibility for people and goods to move throughout the region.

While the 2021 Regional Plan is not an adopted guidance document, it does provide insight into the direction of the next version of the RTP. While no impacts can occur, the project alternatives are evaluated for their consistency with the future vision as currently articulated.

Port of San Diego

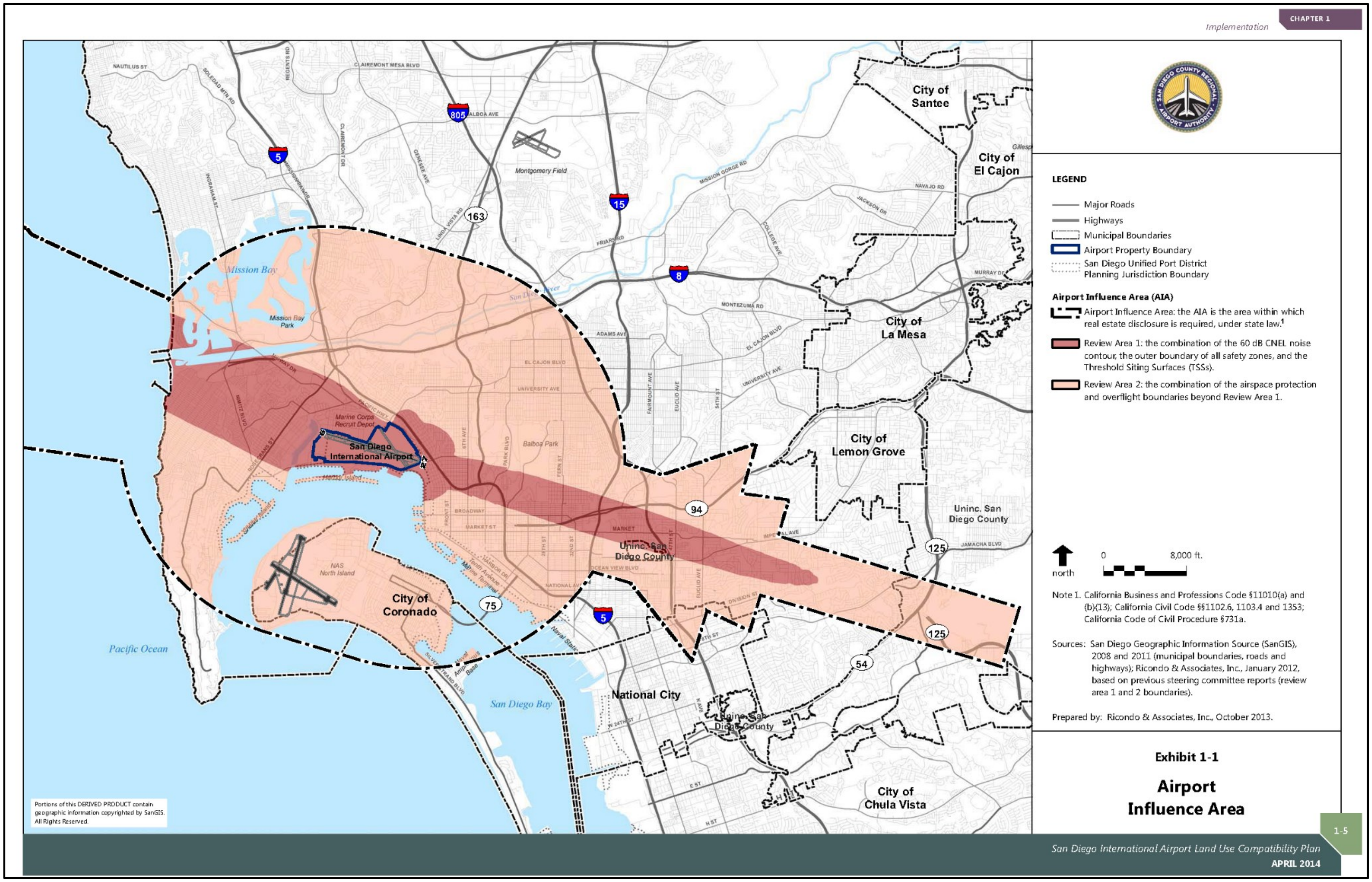
The Port of San Diego manages 5,483 acres of land around San Diego Bay and the Pacific Ocean as part of its master plan (Port of San Diego, 2017a). San Diego Bay is divided into nine planning districts. Planning District Two (Harbor Island) is closest to OTC and includes San Diego International Airport, as well as the waterfront along Harbor Drive and Harbor Island. San Diego International Airport has an Airport Master Plan and Airport Land Use Compatibility Plan that control its management and growth. Portions of District Two include locations that focus on commercial recreation, public access, boat berthing, industrial business park, and water navigation uses.

No direct or indirect land use impacts to the waterfront area along Harbor Drive are expected due to the geographic separation from OTC. Land use controls associated with San Diego International Airport are discussed in the next section.

Airport Land Use Compatibility Plan

The Airport Land Use Compatibility Plan for San Diego International Airport was prepared by the San Diego County Regional Airport Authority, acting in its capacity as the San Diego County Airport Land Use Commission, which manages the day-to-day operations at San Diego International Airport (Airport Land Use Commission, 2014). The Airport Land Use Compatibility Plan is the fundamental tool used to promote airport land use compatibility surrounding San Diego International Airport. This Airport Land Use Compatibility Plan is distinct from the Airport Master Plan. While the Airport Master Plan describes plans for development on airport property, the Airport Land Use Compatibility Plan focuses on policies guiding future development and redevelopment in the area surrounding the airport. The Airport Land Use Compatibility Plan provides airport land use compatibility policies and standards for the following airport-related factors: noise, safety, airspace protection, and overflight.

OTC Site 1 and OTC Site 2 are not under any commercial jet flight tracks, but there are numerous multi-engine propeller departures that overlay OTC by general aviation aircraft. OTC Site 1 is within the Airport Influence Area–Review Areas 1 and 2 and OTC Site 2 is wholly within Review Area 1. The outer boundary of Review Area 1 corresponds with the 60-decibel (dB) community noise equivalent level noise contour (see Section 3.13, *Noise*, for additional information). Figure 3.4-3 shows the Airport Influence Area–Review Areas 1 and 2, as depicted in the Airport Land Use Compatibility Plan.



Source: Airport Land Use Commission, 2014.

Figure 3.4-3 Airport Influence Areas from Airport Land Use Compatibility Plan

The portions of the OTC Site 2 within Review Area 1 require buildings to have sound attenuation to control the level of interior noise. Neither OTC Site 1 or OTC Site 2 is within any of the safety zones or threshold siting surfaces, but they are within the airspace and overflight protection zone that requires avigation easements and overflight agreements for development. Development in this area also requires submittal of an application for Airport Land Use Compatibility Plan consistency determination and review by the FAA for an obstruction and hazard assessment.

Consistency with the Airport Land Use Compatibility Plan will be the focus of impact evaluation. The evaluation of airspace and noise concerns are addressed in Sections 3.12, *Airspace,* and 3.13, *Noise*, respectively.

3.4.2.3 Coastal Zone Management Act

Through the Coastal Zone Management Act of 1972, as amended, coastal states are provided the authority to evaluate projects conducted, funded, or permitted by the federal government. In compliance with the Coastal Zone Management Act, any federal project or activity affecting the coastal zone must be consistent, to the maximum extent practicable, with the provisions of federally approved state coastal plans. The California Coastal Commission developed the California Coastal Management Program pursuant to the requirements of the Coastal Zone Management Act. The California Coastal Commission is responsible for reviewing proposed federal and federally authorized activities affecting the state's coastal resources to assess the activities' consistency with the federally approved California Coastal Management Program.

This project is located on property that is under the exclusive control of the Navy, is not open to the public, and occurs outside of the coastal zone boundary. Due to the potential for land use decisions to affect coastal resources, the Navy conducted an effects analysis as part of its determination of the Proposed Action Alternatives effects for purposes of federal consistency review in compliance with the Coastal Zone Management Act. This was done to determine whether the Proposed Action Alternatives (even if conducted entirely within a federal enclave) would affect any coastal resource. For all activities affecting coastal uses or resources, preparation of a Coastal Consistency Determination or Coastal Consistency Negative Determination is required. A Coastal Consistency Determination is being prepared as part of the EIS process and will be provided as Appendix N in the Final EIS.

3.4.2.4 Regional Land Use

OTC Site 1 and OTC Site 2 are within the City of San Diego's planning jurisdiction; however, the City of San Diego has no regulatory authority over land owned by the federal government. Despite this, the Navy coordinates its activities with the city when possible, to avoid potential land use conflicts. OTC is within the Midway-Pacific Highway Community Plan area, and in close proximity to the Old Town and Uptown community planning areas as well. Figures 3.4-4 and 3.4-5 provides an overview of existing and planned regional land use.

3.4.2.5 Local Land Use

The existing land use of OTC Site 1 and OTC Site 2 is classified as Military Use by the City of San Diego. OTC Site 1 contains 11 buildings and areas of outdoor storage and parking. OTC Site 2 contains three buildings and areas of outdoor storage and parking. The buildings contain a range of functions including office, laboratory and storage and provide about 1.5 million square feet of usable space. The outdoor areas represent about 900,000 square feet of space used for storage and parking.

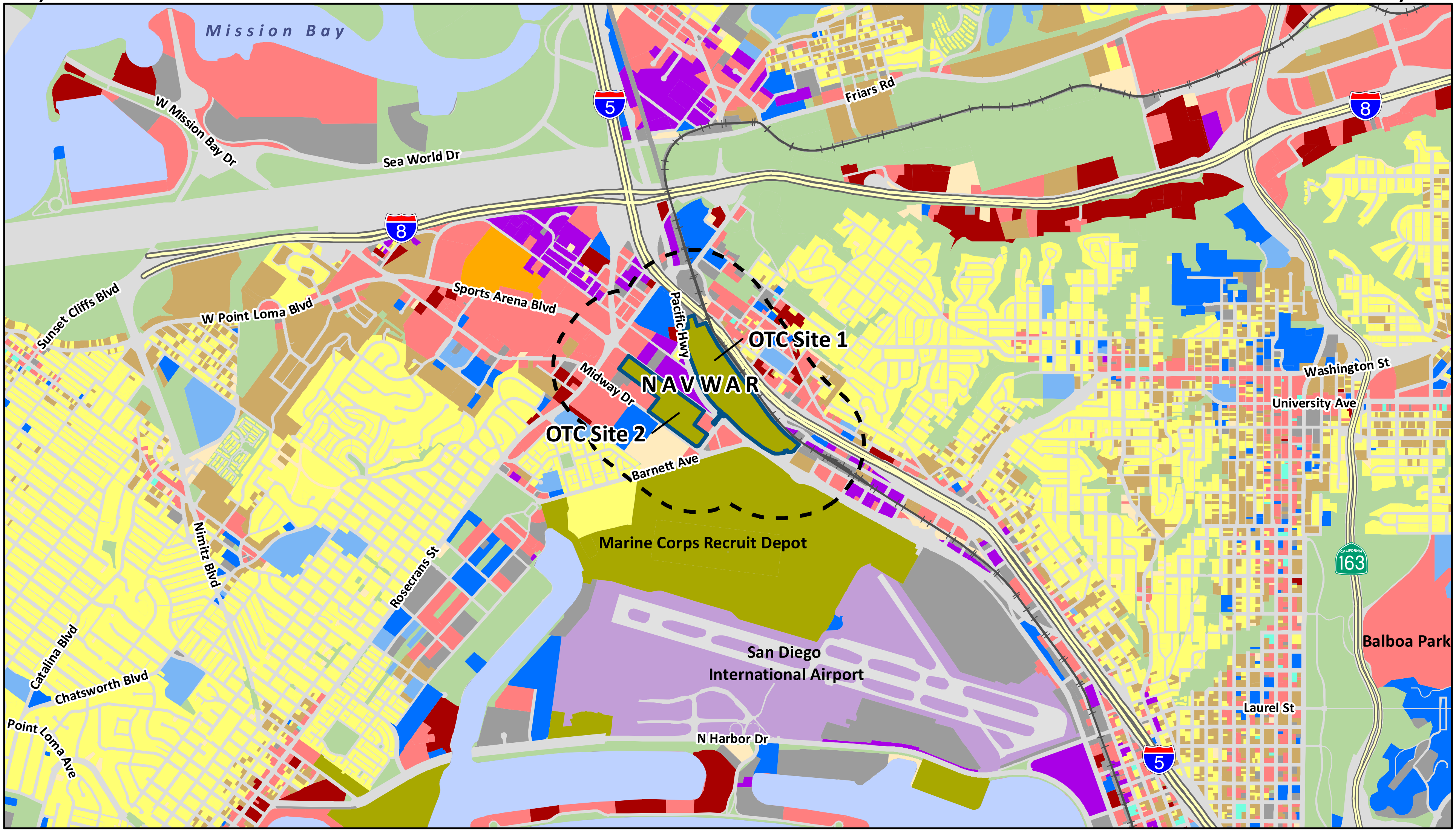
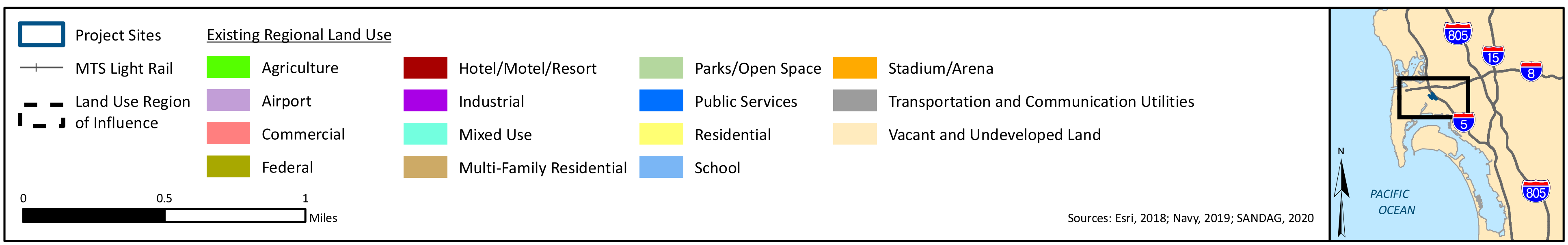


Figure 3.4-4. Existing Regional Land Use



Sources: Esri, 2018; Navy, 2019; SANDAG, 2020

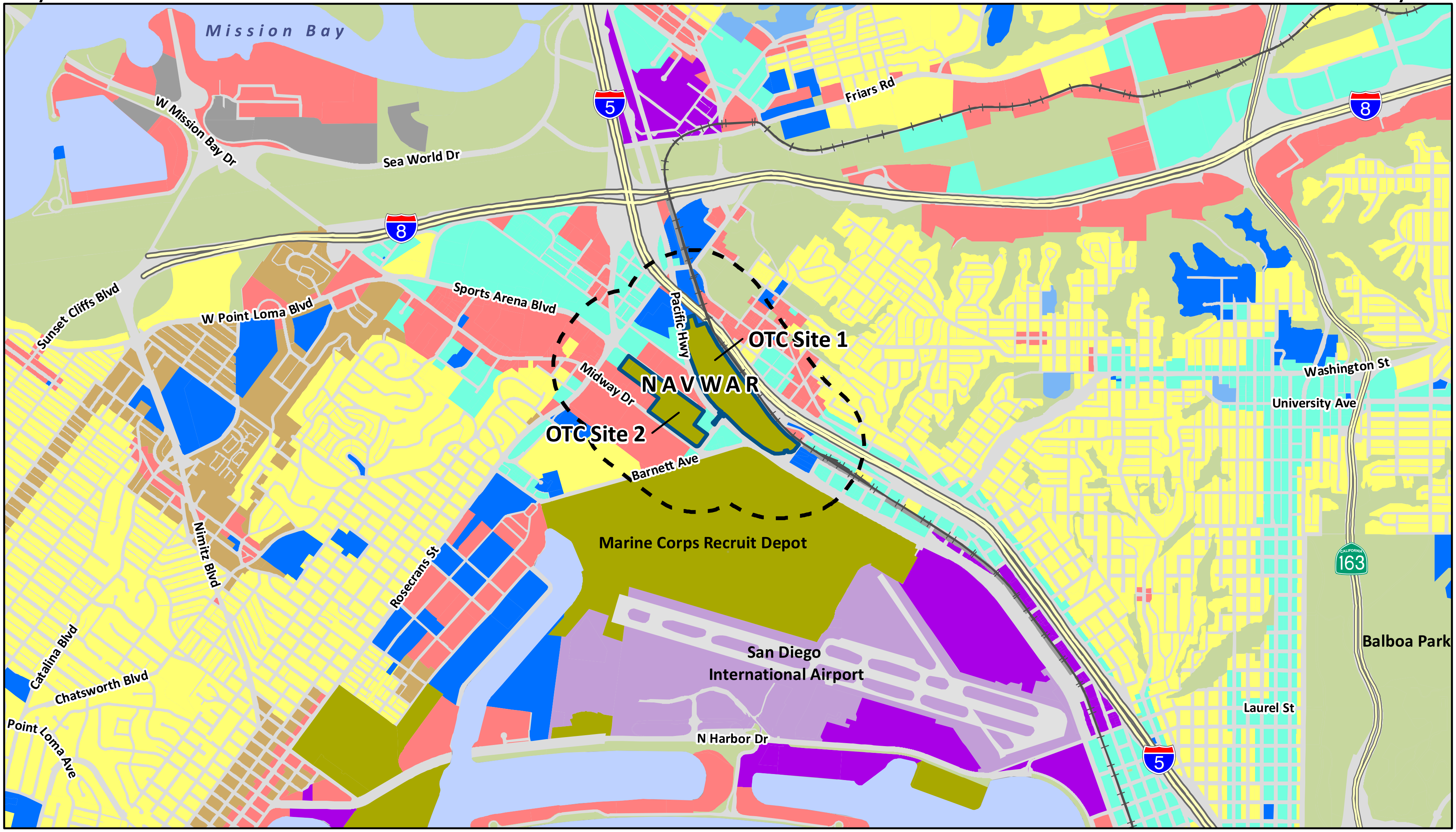
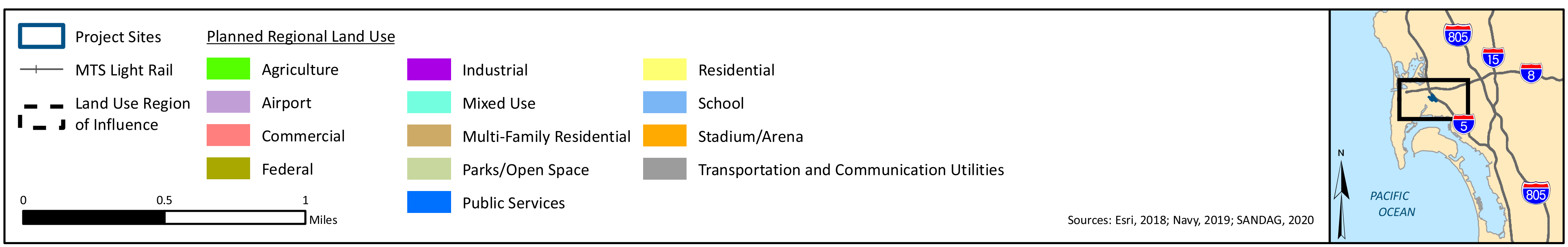


Figure 3.4-5. Planned Regional Land Use



Land use surrounding OTC is a mixture of light industrial/commercial, military, residential, and historic Old Town. West of Pacific Highway and north of Barnett Avenue is a mixture of light industrial and commercial businesses. South of Barnett Avenue is MCRD San Diego. South/southeast of OTC Site 1 and OTC Site 2 are other light industrial and commercial businesses. East of OTC and across Interstate 5 are residential areas, restaurants, hotels, and various businesses. North of OTC is the Old Town Transit Center for the Amtrak and San Diego Trolley rail systems. Northeast of OTC and across Interstate 5 is historic Old Town with a variety of restaurants, museums, and tourist attractions.

3.4.2.6 Planned Land Use

The planned land use of OTC Site 1 and OTC Site 2 continues to be classified as Military Use by the City of San Diego within the Midway-Pacific Highway Community Plan. The Midway-Pacific Highway Community Plan is organized around the concept of villages and districts. OTC Site 1 is within the Kurtz District and OTC Site 2 is within the Dutch Flats Urban Village.

3.4.2.7 Recreation, Access, and Agricultural Resources

There are no recreational or public access resources within or immediately adjacent to OTC Site 1 or 2. The Midway-Pacific Highway Community Plan identifies 29.86 acres of proposed parkland at buildout which would leave the community with a population-based parkland deficit of 49.27 acres. Popular recreation spots nearby include Presidio Park to the northeast, Mission Bay to the north, and Liberty Station and San Diego Bay to the south; however, OTC Site 1 and OTC Site 2 have no public access points to any of these recreation areas. There are no agricultural resources within the ROI of OTC.

3.4.3 Environmental Consequences

Land use impacts are analyzed via consistency and compatibility assessments compared to existing and planned conditions within and around OTC. Within OTC, the Naval Base Point Loma Old Town Campus Area Development Plan is the federal land use plan that will be assessed. The area surrounding OTC is a mix of federal property (MCRD), the Port of San Diego (District Two and San Diego International Airport), and the City of San Diego (Midway-Pacific Highway, Old Town, and Uptown community plan areas). This mix of ownership and land use control requires a varied approach to the analysis.

The MCRD is managed by the Navy and considered part of the lead agency's organization. Any issues or concerns with the Proposed Action Alternatives are being addressed by the Navy internally and do not require additional evaluation.

Potential land use conflicts with the San Diego International Airport are managed by overlay zones documented in the Airport Land Use Compatibility Plan. Consistency and compatibility of the Proposed Action Alternatives can be directly assessed.

However, assessing conflicts with the local and regional land use plans is more complex. At a regional scale, the City of San Diego and SANDAG have identified broad planning goals, policies, and strategies that integrate land use, public transit, and transportation systems to encourage denser development and redevelopment within the urbanized areas of the county. At a local scale, the Midway-Pacific Highway Community Plan translates those broader goals and policies into a 30-year community vision for land uses, development density, and public infrastructure improvements. The 2018 update of the Midway-Pacific Highway Community Plan did not envision the Proposed Action Alternatives, but even if it had this local plan would not have had the authority to plan uses on OTC because it is federal property. Therefore, consistency of mixed-use development (Alternatives 2 through 5) with the community plan would not have been expected.

In summary the following impact analysis will expand upon the items presented above in greater detail and evaluate the degree to which the Proposed Action Alternatives would be:

- consistent with the Naval Base Point Loma OTC Area Development Plan
- consistent and/or compatible with planning overlays (e.g., San Diego International Airport, Naval Air Station North Island)
- compatible with surrounding existing or planned land use within the ROI
- consistent with regional planning goals, policies, and strategies

3.4.3.1 No Action Alternative

Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities, as described in Section 2.3.2, *No Action Alternative*. There would be no change to existing land use. Under the No Action Alternative, the Area Development Plan recommends the repair and limited modernization of select facilities at OTC in order to help NAVWAR more fully accomplish its mission. Therefore, no impacts to adjacent existing or planned land use would occur with implementation of the No Action Alternative.

3.4.3.2 Alternative 1: NAVWAR-Only Redevelopment

No planned changes to existing land use and functions would occur at either OTC Site 1 or OTC Site 2. The recapitalization of the existing buildings on OTC Site 1 would not increase their height. The demolition of buildings on OTC Site 1 would provide additional onsite parking that would reduce the usage of public on-street parking by NAVWAR and its contractors. Although this alternative would not change land use at OTC Site 1 or OTC Site 2, it would make activities at OTC more efficient.

Military Plans

Alternative 1 would also be consistent with military planning documents and objectives identified in Naval Base Point Loma OTC Area Development Plan and the Draft Naval Base Point Loma OTC Recapitalization Plan. Alternative 1 has no effect on the approach/departure zone documented in the AICUZ Update for Naval Air Station North Island and Naval Outlying Landing Field Imperial Beach.

Surrounding Land Use

Alternative 1 does not change the existing land uses at OTC and therefore has no impact on the existing land uses surrounding OTC.

Regional and Local Plans

Alternative 1 does not change the existing land uses at OTC and therefore has no impact on the planned land uses surrounding OTC. Alternative 1 would be consistent with the city’s General Plan and with the Midway-Pacific Highway Community Plan goal for development of employment uses in proximity to transit and use of a multi-modal approach to improving circulation and access throughout the community.

Transportation Efficiency

Alternative 1 would also be consistent with the goals, policies, and strategies identified in the SANDAG 2019 Federal RTP and 2021 Regional Plan by maintaining employment uses in proximity to transit.

Port of San Diego and San Diego International Airport

OTC is outside the areas managed under the Port of San Diego Master Plan. District Two (Harbor Island) is the closest area and focuses on commercial recreation, public access, boat berthing, industrial business park, and water navigation uses. None of these uses would be affected by Alternative 1.

Alternative 1 would remain consistent with the San Diego International Airport's Airport Influence Area - Review Areas 1 or 2 and the building sound attenuation requirements would remain in place.

Growth Inducing Effects

Alternative 1 maintains the existing military land uses on OTC and does not add any private development, and therefore has no additional growth inducing effects compared to the No Action Alternative.

Conclusion

Alternative 1 is consistent with the military, regional, and local plans. It does not change the type or scale of existing land uses at OTC, it only reorganizes the land uses for improved efficiency, it would therefore result no impacts to adjacent existing or planned land use.

3.4.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Under Alternative 2, new facilities would be constructed for NAVWAR at OTC and the remainder of the site would be used for private development of residential, office, hotel, retail, streets, alleys, sidewalks, parks, and open space uses.

Military Plans

Alternative 2 is consistent with the Naval Base Point Loma OTC Area Development Plan recommendation to consider a public-private ground lease agreement to fund new NAVWAR facilities. Alternative 2 is not consistent with the Draft Naval Base Point Loma OTC Recapitalization Plan as that plan focuses solely on Alternative 1. The height of the buildings proposed within Alternative 2 would not conflict with the approach/departure zone documented in the AICUZ Update for Naval Air Station North Island and Naval Outlying Landing Field Imperial Beach.

Surrounding Land Use

The proposed uses within Alternative 2 do not directly conflict with the existing institutional, light industrial, and commercial uses surrounding OTC Site 1 or OTC Site 2. However, the density of proposed uses is significantly different than the surrounding areas.

Regional and Local Plans

Alternative 2 would be consistent with the SANDAG regional objectives and the city's goal to address the city's critical housing needs and foster the development of sustainable communities, through the implementation of the 'City of Villages' strategy that permeates the General Plan and associated community plans. OTC is identified as a regional employment center and is within a Transit Priority Area. The proposed mixed-use development is consistent with these regional plans and strategies.

The Midway-Pacific Highway Community Plan supports an increase of household population, dwelling units, new jobs, and non-residential development over a 30-year planning horizon (2015-2045). As described previously in Section 2.2, *Alternatives Development*, Alternatives 2 through 5 were developed based on NAVWAR requirements, developer responses to the Navy's RFI and a market analysis that evaluated development potential on OTC. The combination of these sources supports the density of development contained in the alternatives, even though it is inconsistent with the densities contained in the Midway-Pacific Highway Community Plan.

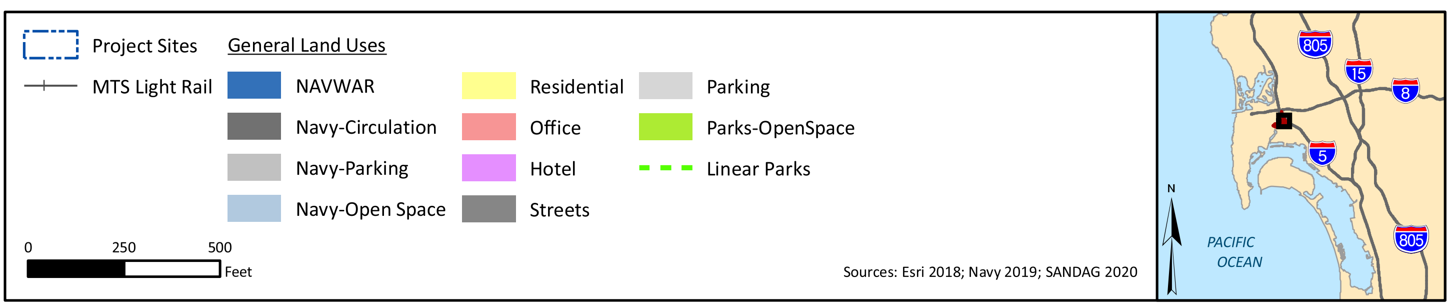
Table 3.4-3 shows the household population, dwelling units, employment data, non-residential area, and public parkland information for Alternative 2. The household population, dwelling units, and employment data comes from the Socioeconomics Study prepared for this EIS (see Appendix G). The non-residential use information is derived from Table 2-1 based on the anticipated square feet of development by use type for Alternative 2. Because specific site layouts are not known at this time, a general representation of the land uses that would occur on site under Alternative 2 are shown in Figure 3.4-6.

Table 3.4-3 Comparison of Midway-Pacific Highway Community Plan Growth to Alternative 2

Growth Area	***Community Plan- Existing (2015)***	***Community Plan- Planned Growth # (%)***	***Community Plan- Future (2045)***	***Alternative 2 # (% of Planned Growth #)***
Household Population	4,600	23,660 (514%)	28,260	9,480 (40%)
Employment (Jobs)	15,200	4,370 (29%)	19,570	4,229 (97%)
Residential (Dwelling Units)	1,935	10,155 (525%)	12,090	5,267 (52%)
Non-Residential (SF)	9,800,000	300,000 (3.1%)	10,100,000	1,400,000 (480%)
Parkland Inventory	***Community Plan- Existing (2015)***	***Community Plan- Planned Growth # (%)***	***Community Plan- Future (2045)***	***Alternative 2 # (% of Planned Growth #)***
Planned Parks	0	9.8	9.8	12.3
Park Equivalencies	0	13.51	13.51	5.7
Joint-Use Areas	0	1.5	1.5	0
Portion of Resource-based Park	0	3.3	3.3	0
Planned Recreation Center	0	1.75	1.75	0
Total Parkland	0	29.86	29.86	18.00
Population-based Park Requirement (2.8 acres / 1,000 population)	12.88	66.25	79.13	26.54
Parkland Surplus (Deficit)	(12.88)	(36.39)	(49.27)	(8.54)
Percentage of Requirement	0%	45%	38%	68%

Legend: # = number; % = percent; SF = square feet.

Figure 3-4.6. Alternative 2 General Land Uses



Alternative 2 is considered in the table above in addition to the growth included in the Midway-Pacific Highway Community Plan, as its long-term development phasing parallels the long-term planning horizon of the plan (2045). Midway-Pacific Highway community planners are considering an update to the community plan in light of the potential mixed-use development on OTC and the elimination of the 30-foot height limit. This would likely increase densities in the community plan area and could result in OTC development being consistent with the plan.

Alternative 2 proposes 6,600 (5,267 occupied) dwelling units which is an additional 52 percent of growth compared to what is planned in the community plan. The floor area ratio associated with the residential development is about 9.6.

Alternative 2 proposes an increase of 9,480 to the household population which is an additional 40 percent of growth compared to what it in the community plan. This results in an additional 26.54 acres of population-based parkland of which the Alternative provides 18.00 acres, leaving a deficit of 8.54 acres. While Alternative 2 does not meet the full parkland requirement, it does provide 68 percent, which is nearly twice the ratio provided in the community plan.

Alternative 2 proposes land uses that would generate an additional 4,229 jobs which nearly doubles the growth contained in the community plan. While this is a significant addition, the proximity of OTC to the existing Old Town Transit Center, the projected growth in contractor support identified by NAVWAR, and the incorporation of residential makes this consistent with the regional planning policies and strategies and the Transit Oriented Development zone, but inconsistent with the community plan.

Alternative 2 proposes 1,440,000 square feet of non-residential land uses (mainly office), which is 480 percent of the planned growth (300,000 square feet) in the community plan. While this degree of non-residential growth is inconsistent with the community plan it is consistent with the regional planning policies and strategies and the Transit Oriented Development zone.

OTC Site 2 is within the Dutch Flats Urban Village Community Plan Implementation Overlay Zone-Type A. However, the federal government/Navy is not bound by the City of San Diego permit process and would not be required to comply with the identified requirements or incentives. Alternative 2 is inconsistent with the community plan, though consistency is not expected due to current federal ownership.

Transportation Efficiency

Alternative 2 is consistent with the SANDAG 2019 Federal RTP by implementing Transit Oriented Development. Alternative 2 is consistent with the city's General Plan and with the Midway-Pacific Highway Community Plan goal for development of residential and employment uses in proximity to transit and use of a multi-modal approach to improving circulation and access throughout the community.

Port of San Diego and San Diego International Airport

OTC is outside the areas managed under the Port of San Diego Master Plan. District Two (Harbor Island) is the closest area and focuses on commercial recreation, public access, boat berthing, industrial business park, and water navigation uses. None of these uses would be affected by Alternative 2.

Alternative 2 would not change the San Diego International Airport's Airport Influence Area - Review Areas 1 or 2 and building sound attenuation requirements would remain in place. The taller buildings being considered exceed the 150-foot horizontal surface that extends 10,000 feet out from the San Diego International Airport runway (see Section 3.12, *Airspace,* for additional information). This will need to be reviewed by the FAA and could be considered an obstruction or hazard to general aviation departing San Diego International Airport.

Growth Inducing Effects

The addition of private development to Alternative 2 could contribute to a growth inducing effect on private parcels within OTC's land use ROI. This effect could be both positive and negative in nature. Positive effects could include improved private sector interest in redevelopment of existing parcels that could help implement the goals of the Midway-Pacific Highway and Old Town San Diego community plans. Negative effects could include pressure to redevelop with different land use and/or intensities or draw attention away from areas targeted for redevelopment. However, neither the potential positive nor negative effects would immediately alter the proposed land use at the project location or in the immediate area, and land use control of these areas would remain with the City of San Diego.

Conclusion

As described above, Alternative 2 is consistent with the military and regional plans. Alternative 2 is also consistent with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan. The increased density supported by the alternative development process described in Section 2.2, *Alternatives Development*, contributes to significant additional proposed growth in dwelling units, population, jobs, and non-residential uses over the targets contained in the community plan. The inconsistency with the community plan land use densities would result in a significant impact relative to current planned land use within the Midway-Pacific Highway Community Plan, although that plan may be updated in the future in light of the Navy's proposed mixed-use development and the removal of the 30-foot height limit in this area.

3.4.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Under Alternative 3, new facilities would be constructed for NAVWAR at OTC and the remainder of the site would be used for private development of residential, office, hotel, retail, site circulation, parks, and open space uses. Alternative 3 includes less private development than Alternative 2.

Military Plans

Alternative 3 would provide the same benefits and consistency as Alternative 2.

Surrounding Land Use

The planned land uses within Alternative 3 are the same as Alternative 2. The density of development on OTC under Alternative 3 would be less than under Alternative 2, but still represents a significant change from existing surrounding development within the community.

Regional and Local Plans

Alternative 3 would be consistent with the SANDAG regional objectives and the city's goal to address the city's critical housing needs and foster the development of sustainable communities, through the implementation of the 'City of Villages' strategy that permeates the General Plan and associated community plans. OTC is identified as a regional employment center and is within a Transit Priority Area. The proposed mixed-use development is consistent with these regional plans and strategies.

Alternative 3 would have similar impacts as described for Alternative 2, but with the following differences. Alternative 3 would not increase the household population, dwelling units, new jobs, non-residential uses, or parkland as significantly as Alternative 2 or beyond the level of planned growth in the Midway-Pacific Highway Community Plan as shown in Table 3.4-4. Because specific site layouts are not known at this time, a general representation of the land uses that would occur on site under Alternative 3 are shown in Figure 3.4-7. Alternative 3 is considered in the table above in addition to the growth included in the Midway-Pacific Highway Community Plan, as its long-term development phasing parallels the long-term planning horizon of the plan (2045). Midway-Pacific Highway community planners are considering an update to the community plan in light of the potential mixed-use development on OTC and the elimination of the 30-foot height limit. This would likely increase densities in the community plan area and could result in OTC development being consistent with the plan.

Alternative 3 proposes 4,400 (3,511 occupied) dwelling units which is an additional 35 percent of growth compared to what is planned in the community plan. The floor area ratio associated with the residential development is about 6.3.

Alternative 3 proposes an increase of 6,320 to the household population which is an additional 27 percent of growth compared to what it in the community plan. This results in an additional 17.70 acres of population-based parkland of which the Alternative provides 13.50 acres, leaving a deficit of 4.20 acres. While Alternative 3 does not meet the full parkland requirement, it does provide 76 percent, which is nearly twice the ratio provided in the community plan.

Table 3.4-4 Comparison of Midway-Pacific Highway Community Plan Growth to Alternative 3

Growth Area	*Community Plan- Existing (2015)*	*Community Plan- Planned Growth # (%)*	*Community Plan- Future (2045)*	*Alternative 3 # (% of Planned Growth #)*
Household Population	4,600	23,660 (514%)	28,260	6,320 (27%)
Employment (Jobs)	15,200	4,370 (29%)	19,570	2,765 (63%)
Residential (Dwelling Units)	1,935	10,155 (525%)	12,090	3,511 (35%)
Non-Residential (SF)	9,800,000	300,000 (3.1%)	10,100,00	940,000 (313%)
Parkland Inventory	*Community Plan- Existing (2015)*	*Community Plan- Planned Growth # (%)*	*Community Plan- Future (2045)*	*Alternative 3 # (% of Planned Growth #)*
Planned Parks	0	9.8	9.8	6.60
Park Equivalencies	0	13.51	13.51	6.90
Joint-Use Areas	0	1.5	1.5	0
Portion of Resource-based Park	0	3.3	3.3	0
Planned Recreation Center	0	1.75	1.75	0
Total Parkland	0	29.86	29.86	13.50
Population-based Park Requirement (2.8 acres / 1,000 population)	12.88	66.25	79.13	17.70
Parkland Surplus (Deficit)	(12.88)	(36.39)	(49.27)	(4.20)
Percentage of Requirement	0%	45%	38%	76%

Legend: # = number; % = percent; SF = square feet.

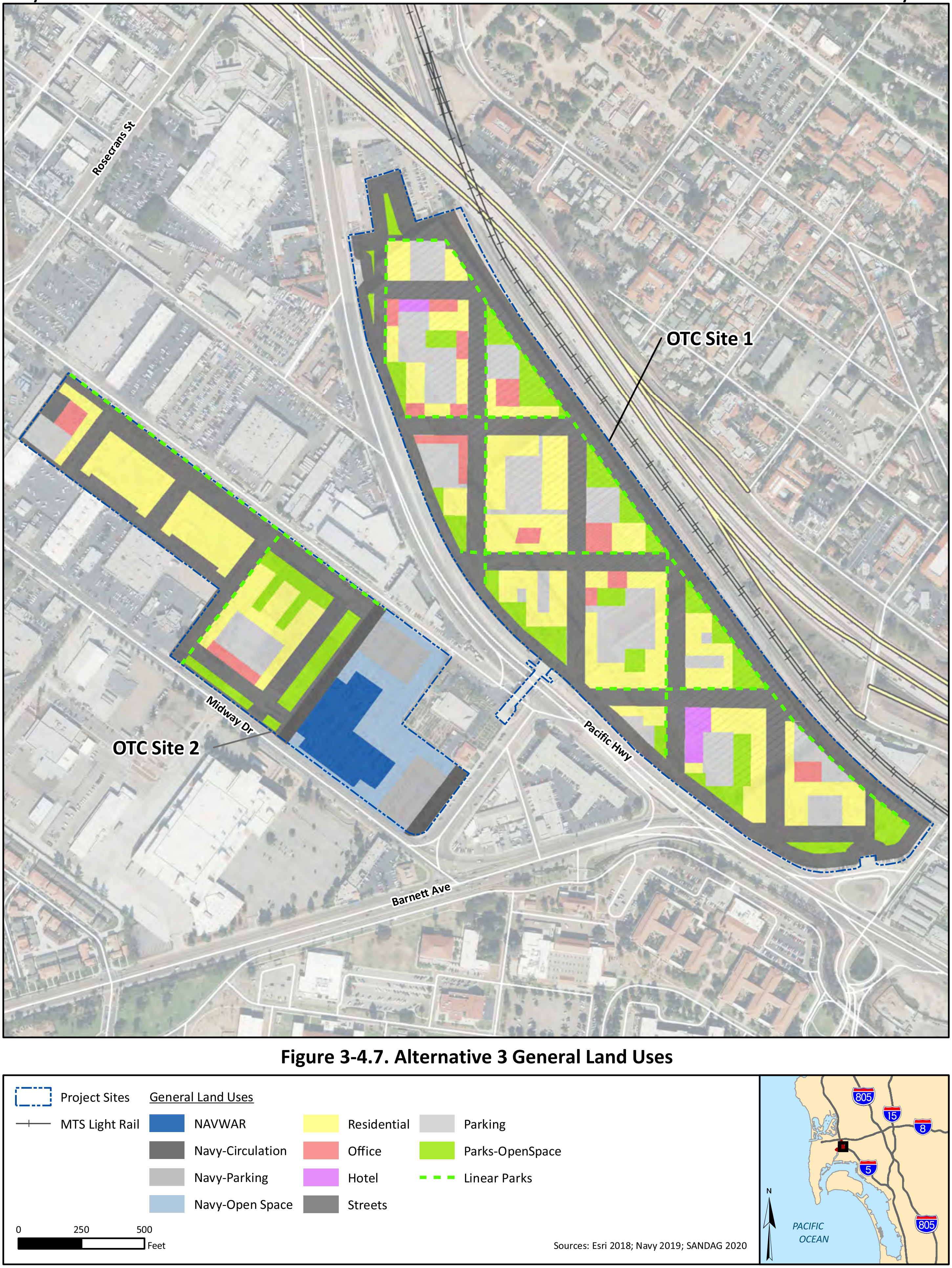


Figure 3-4.7. Alternative 3 General Land Uses

Alternative 3 proposes land uses that would generate an additional 2,765 jobs which is an additional 63 percent of the growth contained in the community plan. While this is a significant addition, the proximity of OTC to the existing Old Town Transit Center, the projected growth in contractor support identified by NAVWAR, and the incorporation of residential makes this consistent with the regional planning policies and strategies and the Transit Oriented Development zone, but inconsistent with the community plan.

Alternative 3 proposes 940,000 square feet of non-residential land uses (mainly office), which is 313 percent of the planned growth (300,000 square feet) in the community plan. While this degree of non-residential growth is inconsistent with the community plan, it is consistent with the regional planning policies and strategies and the Transit Oriented Development zone.

Transportation Efficiency

Alternative 3 would provide the same benefits and consistency as Alternative 2.

Port of San Diego and San Diego International Airport

Alternative 3 would provide the same consistency and FAA review requirements as Alternative 2.

Growth Inducing Effects

Alternative 3 would have similar, but slightly less, growth inducing effects as Alternative 2, due to the lower number of dwelling units, new jobs, and non-residential square footage proposed under this alternative.

Conclusion

As described above, Alternative 3 is consistent with the military and regional plans. Alternative 3 is also consistent with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan. The increased density supported by the alternative development process described in Section 2.2, *Alternatives Development*, contributes to significant additional proposed growth in dwelling units, population, jobs, and non-residential uses over the targets contained in the community plan. While Alternative 3 has less development than Alternative 2, the inconsistency with the community plan land use densities would still result in a significant impact relative to planned land use within the Midway-Pacific Highway Community Plan, although that plan may be updated in the future in light of the Navy's proposed mixed-use development and the removal of the 30-foot height limit in this area.

3.4.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with Transit Center

Under Alternative 4, new facilities would be constructed for NAVWAR at OTC, and the remainder of the site would be used for private development of residential, office, hotel, retail, site circulation, park, open space uses, and consolidation of a transit center. Alternative 4 includes the most private development.

Military Plans

Alternative 4 would provide the same benefits and consistency as Alternative 2.

Surrounding Land Use

The planned land uses within Alternative 4 are similar to Alternative 2, with the addition of a transit center. The density of development on OTC under Alternative 4 would be greater than under Alternative 2, which represents a significant change from existing surrounding development within the community.

Regional and Local Plans

Alternative 4 would be consistent with the SANDAG regional objectives and the city's goal to address the city's critical housing needs and foster the development of sustainable communities, through the implementation of the 'City of Villages' strategy that permeates the General Plan and associated community plans. OTC is identified as a regional employment center and is within a Transit Priority Area. The proposed mixed-use development is consistent with these regional plans and strategies.

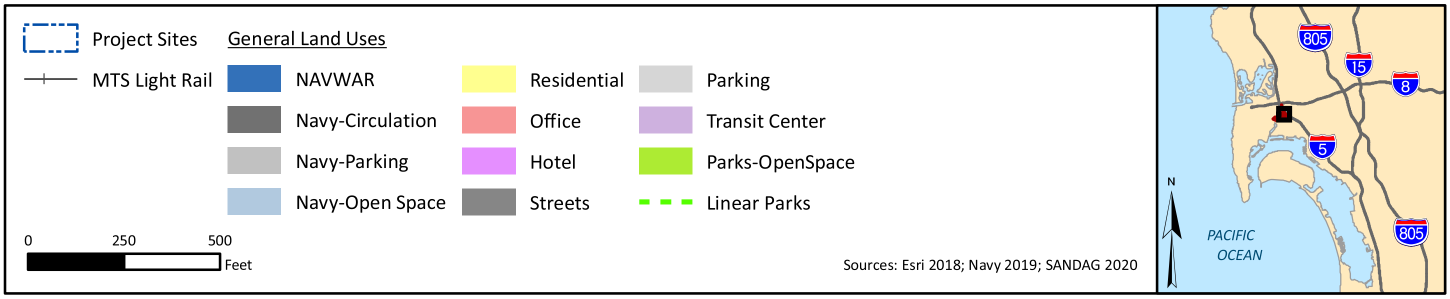
Alternative 4 would have similar impacts as described for Alternative 2, but with the following differences. Alternative 4 would further increase the household population, dwelling units, new jobs, non-residential uses, or parkland beyond the level of planned growth in the Midway-Pacific Highway Community Plan as shown in Table 3.4-5. Because specific site layouts are not known at this time, a general representation of the land uses that would occur on site under Alternative 4 are shown in Figure 3.4-8.

Table 3.4-5 Comparison of Midway-Pacific Highway Community Plan Growth to Alternative 4

Growth Area	*Community Plan- Existing (2015)*	*Community Plan- Planned Growth # (%)*	*Community Plan- Future (2045)*	*Alternative 4 # (% of Planned Growth #)*
Household Population	4,600	23,660 (514%)	28,260	14,364 (61%)
Employment (Jobs)	15,200	4,370 (29%)	19,570	5,623 (129%)
Residential (Dwelling Units)	1,935	10,155 (525%)	12,090	7,980 (79%)
Non-Residential (SF)	9,800,000	300,000 (3.1%)	10,100,00	1,890,000 (630%)
Parkland Inventory	*Community Plan- Existing (2015)*	*Community Plan- Planned Growth # (%)*	*Community Plan- Future (2045)*	*Alternative 4 # (% of Planned Growth #)*
Planned Parks	0	9.8	9.8	13.65
Park Equivalencies	0	13.51	13.51	4.35
Joint-Use Areas	0	1.5	1.5	0
Portion of Resource-based Park	0	3.3	3.3	0
Planned Recreation Center	0	1.75	1.75	0
Total Parkland	0	29.86	29.86	18.00
Population-based Park Requirement (2.8 acres / 1,000 population)	12.88	66.25	79.13	40.22
Parkland Surplus (Deficit)	(12.88)	(36.39)	(49.27)	(22.22)
Percentage of Requirement	0%	45%	38%	45%

Legend: # = number; % = percent; SF = square feet.

Figure 3-4.8. Alternative 4 General Land Uses



Alternative 4 is considered in the table above in addition to the growth included in the Midway-Pacific Highway Community Plan, as its long-term development phasing parallels the long-term planning horizon of the plan (2045). Midway-Pacific Highway community planners are considering an update to the community plan in light of the potential mixed-use development on OTC and the elimination of the 30-foot height limit. This would likely increase densities in the community plan area and could result in OTC development being consistent with the plan.

Alternative 4 proposes 10,000 (7,980 occupied) dwelling units which is an additional 79 percent of growth compared to what is planned in the community plan. The floor area ratio associated with the residential development is about 12.4 (similar to downtown San Diego).

Alternative 4 proposes an increase of 14,364 to the household population which is an additional 61 percent of growth compared to what is in the community plan. This results in an additional 40.22 acres of population-based parkland of which the Alternative provides 18.00 acres, leaving a deficit of 22.22 acres. While Alternative 4 does not meet the full parkland requirement, it does provide 45 percent, which is similar to the 38 percent ratio provided in the community plan.

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

Alternative 4 proposes 1,890,000 square feet of non-residential land uses (mainly office), which is 630 percent of the planned growth (300,000 square feet) in the community plan. While this degree of non-residential growth is inconsistent with the community plan, it is consistent with the regional planning policies and strategies and the Transit Oriented Development zone.

Transportation Efficiency

Alternative 4 provides similar benefits and consistency as Alternative 2. The consolidation of a transit center at OTC would be consistent with SANDAG's 2019 Federal RTP and would improve the connectivity of public and private uses at OTC to transit as it would be directly integrated into the planned development.

Port of San Diego and San Diego International Airport

Alternative 4 provides the same consistency and FAA review requirements as Alternative 2.

Growth Inducing Effects

Alternative 4 would have similar, but slightly higher, growth inducing effects than Alternative 2, due to the proposed increases in dwelling units, new jobs, and non-residential square footage.

Conclusion

As described above, Alternative 4 is consistent with the military and regional plans. Alternative 4 is also consistent with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan. The increased density supported by the alternative development process described in Section 2.2, *Alternatives Development*, contributes to significant additional proposed growth in dwelling units, population, jobs, and non-residential uses over the targets contained in the community plan. Alternative 4 has more development than Alternative 2, and the inconsistency with the community plan land use densities would still result in a significant impact relative to planned land use within the Midway-Pacific Highway Community Plan, although that plan may be updated in the future in light of the Navy's proposed mixed-use development and the removal of the 30-foot height limit in this area.

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

Under Alternative 5, new facilities would be constructed for NAVWAR at OTC and the remainder of the site would be used for private development of residential, office, hotel, retail, site circulation, park, open space uses, and consolidation of a transit center. Alternative 5 includes less private development than Alternative 4.

Military Plans

Alternative 5 provides the same benefits and consistency as Alternative 2.

Surrounding Land Use

The planned land uses within Alternative 5 are similar to Alternative 4. The density of development in Alternative 5 would be greater than under Alternative 2 or Alternative 3, but less than under Alternative 4, and represent a significant change of land use within the community.

Regional and Local Plans

Alternative 5 would be consistent with the SANDAG regional objectives and the city's goal to address the city's critical housing needs and foster the development of sustainable communities, through the implementation of the 'City of Villages' strategy that permeates the General Plan and associated community plans. OTC is identified as a regional employment center and is within a Transit Priority Area. The proposed mixed-use development is consistent with these regional plans and strategies.

Alternative 5 would have similar impacts as described for Alternative 2, but with the following differences. Alternative 5 would increase the household population, dwelling units, new jobs, non-residential uses, or parkland beyond the level of planned growth in the Midway-Pacific Highway Community Plan as shown in Table 3.4-6. Because specific site layouts are not known at this time, a general representation of the land uses that would occur on site under Alternative 5 are shown in Figure 3.4-9.

Table 3.4-6 Comparison of Midway-Pacific Highway Community Plan Growth to Alternative 5

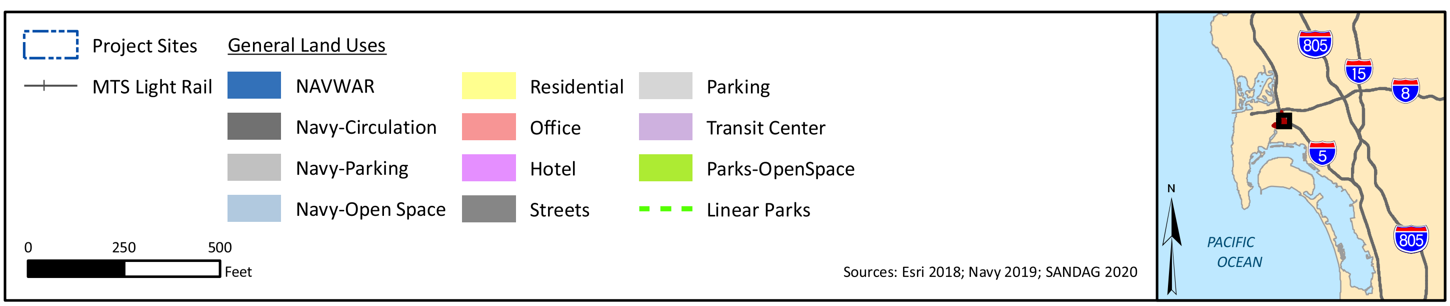
Growth Area	*Community Plan- Existing (2015)*	*Community Plan- Planned Growth # (%)*	*Community Plan- Future (2045)*	*Alternative 5 # (% of Planned Growth #)*
Household Population	4,600	23,660 (514%)	28,260	11,491 (49%)
Employment (Jobs)	15,200	4,370 (29%)	19,570	3,823 (87%)
Residential (Dwelling Units)	1,935	10,155 (525%)	12,090	6,384 (63%)
Non-Residential (SF)	9,800,000	300,000 (3.1%)	10,100,000	1,340,000 (447%)
Parkland Inventory	*Community Plan- Existing (2015)*	*Community Plan- Planned Growth # (%)*	*Community Plan- Future (2045)*	*Alternative 5 # (% of Planned Growth #)*
Planned Parks	0	9.8	9.8	13.00
Park Equivalencies	0	13.51	13.51	5.50
Joint-Use Areas	0	1.5	1.5	0
Portion of Resource-based Park	0	3.3	3.3	0
Planned Recreation Center	0	1.75	1.75	0
Total Parkland	0	29.86	29.86	18.50
Population-based Park Requirement (2.8 acres / 1,000 population)	12.88	66.25	79.13	32.18
Parkland Surplus (Deficit)	(12.88)	(36.39)	(49.27)	(13.68)
Percentage of Requirement	0%	45%	38%	56%

Legend: # = number; % = percent; SF = square feet.

Alternative 5 is considered in the table above in addition to the growth included in the Midway-Pacific Highway Community Plan, as its long-term development phasing parallels the long-term planning horizon of the plan (2045). Midway-Pacific Highway community planners are considering an update to the community plan in light of the potential mixed-use development on OTC and the elimination of the 30-foot height limit. This would likely increase densities in the community plan area and could result in OTC development being consistent with the plan.

Alternative 5 proposes 8,000 (6,384 occupied) dwelling units which is an additional 63 percent of growth compared to what is planned in the community plan. The floor area ratio associated with the residential development is about 10.3 (similar to downtown San Diego).

Figure 3-4.9. Alternative 5 General Land Uses



Alternative 5 proposes an increase of 11,491 to the household population which is an additional 49 percent of growth compared to what it in the community plan. This results in an additional 32.18 acres of population-based parkland of which the Alternative provides 18.50 acres, leaving a deficit of 13.68 acres. While Alternative 5 does not meet the full parkland requirement, it does provide 57 percent, which is higher than the ratio provided in the community plan.

Alternative 5 proposes land uses that would generate an additional 3,823 jobs which is an additional 87 percent of the growth contained in the community plan. While this is a significant addition, the proximity of OTC to the existing Old Town Transit Center, the projected growth in contractor support identified by NAVWAR, and the incorporation of residential makes this consistent with the regional planning policies and strategies and the Transit Oriented Development zone, but inconsistent with the community plan.

Alternative 5 proposes 1,340,000 square feet of non-residential land uses (mainly office), which is 447 percent of the planned growth (300,000 square feet) in the community plan. While this degree of non-residential growth is inconsistent with the community plan, it is consistent with the regional planning policies and strategies and the Transit Oriented Development zone.

Transportation Efficiency

Alternative 5 provides similar benefits and consistency as Alternative 2. The consolidation of a transit center at OTC would be consistent with SANDAG's 2019 Federal RTP and would improve the connectivity of public and private uses at OTC to transit as it would be directly integrated into the planned development.

Port of San Diego and San Diego International Airport

Alternative 5 provides the same consistency and FAA review requirements as Alternative 2.

Growth Inducing Effects

Alternative 5 would have similar, but higher, growth inducing effects than Alternative 2 and less than under Alternative 4.

Conclusion

As described above, Alternative 5 is consistent with the military and regional plans. Alternative 5 is also consistent with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan. The increased density supported by the alternative development process described in Section 2.2, *Alternatives Development* contributes to significant additional proposed growth in dwelling units, population, jobs, and non-residential uses over the targets contained in the community plan. Alternative 5 has more development than Alternative 2 or Alternative 3, and the inconsistency with the community plan land use densities would still result in a significant impact relative to planned land use within the Midway-Pacific Highway Community Plan, although that plan may be updated in the future in light of the Navy's proposed mixed-use development and the removal of the 30-foot height limit in this area.

3.4.3.7 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No management practices, monitoring measures, and potential mitigation measures for land use are warranted based on the analysis in Section 3.4.3.

3.4.3.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be no significant impacts to land use from implementation the No Action Alternative or Alternative 1. There would be significant impacts to land use within the Midway-Pacific Highway Community Plan area from implementation of Alternative 2, Alternative 3, Alternative 4, or Alternative 5.

3.5 Socioeconomics

This section presents baseline data and summary analysis results related to socioeconomic conditions in the project ROI and the potential effects of the Proposed Action Alternatives on such conditions. The socioeconomic conditions evaluated include population and demographics, employment and income, housing, economic activity, and government revenue. The ROI (Figure 3.5-1) for socioeconomics consists of the following census tracts that include OTC and the surrounding area:

- Census Tract 65 (OTC location)
- Census Tract 1
- Census Tract 2.02
- Census Tract 61
- Census Tract 62
- Census Tract 63
- Census Tract 66
- Census Tract 68.01
- Census Tract 68.02

Census tracts are statistical subdivisions of a county roughly the size of a neighborhood (between 1,200 and 8,000 people) that are used by the U.S. Census Bureau to analyze populations over time. For the sake of comparison, socioeconomic data are also presented for the City and County of San Diego and the State of California. More information about the socioeconomic data used and the details of the impact analyses is presented in the Socioeconomic Study (Appendix G).

3.5.1 Regulatory Setting

Regulations that guide the socioeconomic analysis include the CEQ regulations for implementing the procedural provisions of NEPA (40 CFR parts 1500–1508) and specifically include:

- 40 CFR section 1508.8
- 40 CFR section 1508.14

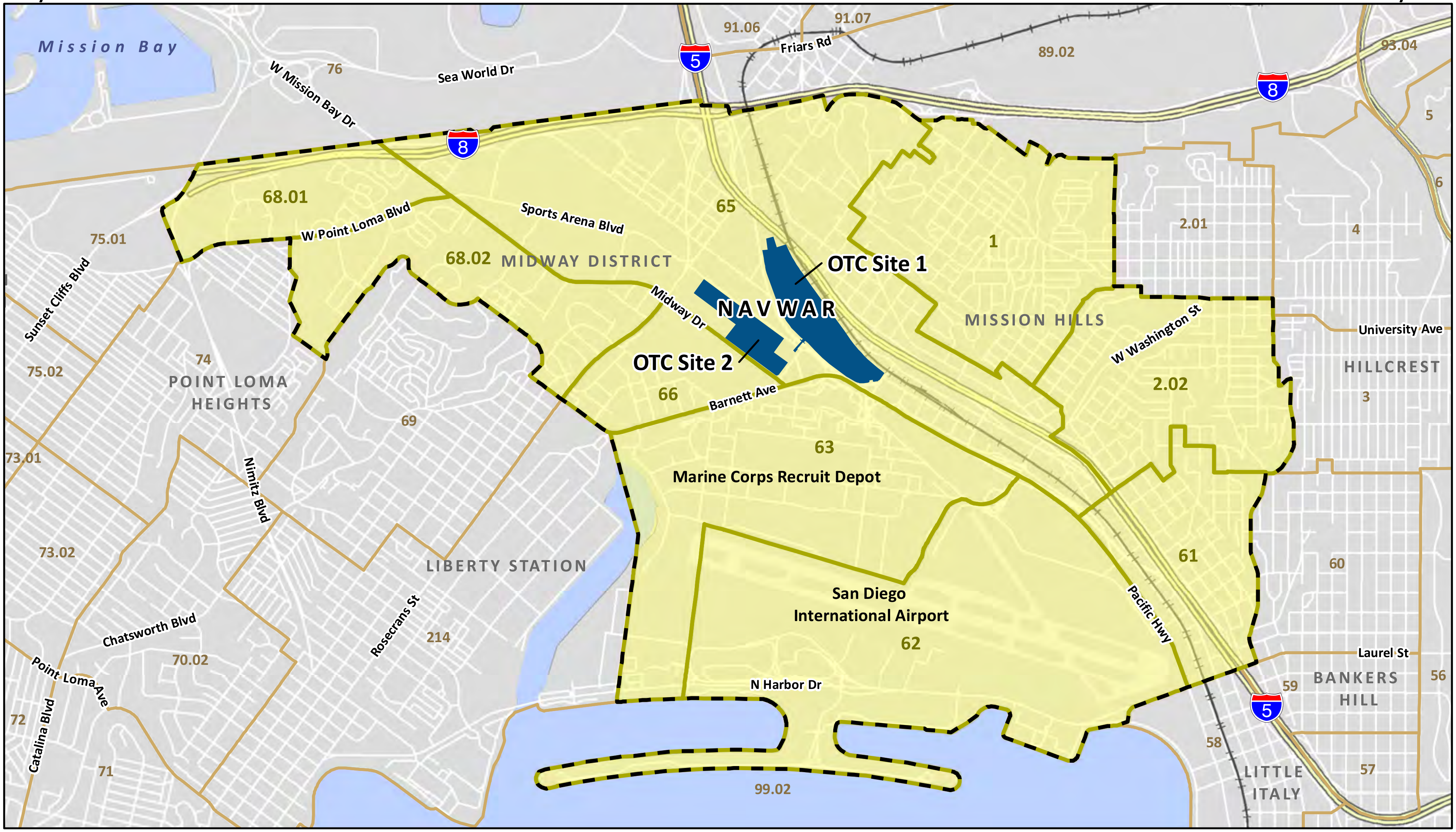
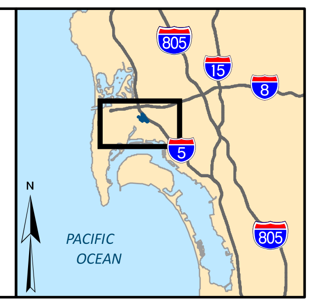


Figure 3.5-1. Socioeconomic Region of Influence

Project Sites
MTS Light Rail
Socioeconomic Region of Influence (ROI)
2010 Census Tracts in the ROI

0 0.5 1 Miles

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020



The CEQ regulations implementing NEPA state that when economic or social effects and natural or physical environmental effects are interrelated, the EIS should discuss these effects on the human environment (40 CFR section 1508.14). The CEQ regulations further state that the "human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment." In addition, 40 CFR section 1508.8 states that agencies need to assess not only direct effects, but also "aesthetic, historic, cultural, economic, social, or health" effects. Following these regulations, the socioeconomic analysis in this EIS evaluates how elements of the human environment such as population, employment, housing, economic activity, and local government revenue might be affected by the Proposed Action Alternatives.

3.5.2 Affected Environment

Data for this section have been collected from published documents issued by federal, state, and local agencies and from state and national databases. The data were used to establish baseline socioeconomic conditions in the context of the ROI, the City of San Diego, San Diego County, and the state.

3.5.2.1 Population

Table 3.5-1 shows Census Bureau (2010, 2015, and 2018a) population data for the ROI, the City of San Diego, San Diego County, and the State of California for 2010, 2015, and 2018, along with annualized growth rates. In 2018, the ROI had a population of 27,202, which was 1.9 percent of the city's population of 1,401,932 residents. For comparison, San Diego County had a population of 3,302,833 in 2018 and the statewide population was 39,148,760. Over the 2010 to 2018 period, the ROI population grew by an average of 0.49 percent per year, while the city and county populations grew by an average of 1.16 percent per year. However, the average annual growth rates for the city, county and state slowed in the latter part of the decade (i.e., average annual growth rates from 2015 to 2018 were lower than from 2010 to 2015) while the rate of annual growth in the ROI increased dramatically from 2015 to 2018 (averaging 1.38 percent per year) compared to the period 2010 to 2015 (an average of -0.20 percent per year).

Table 3.5-1 Population Totals and Annual Growth Rates, 2010-2018

Region	*2010*	*2015*	*2018*	*Annual Growth Rate 2010 to 2015*	*Annual Growth Rate 2015 to 2018*	*Annual Growth Rate 2010 to 2018*
ROI	26,172	26,199	27,202	-0.20%	1.38%	0.49%
City of San Diego	1,282,800	1,359,791	1,401,932	1.20%	1.03%	1.16%
San Diego County	3,022,468	3,223,096	3,302,833	1.32%	0.82%	1.16%
California	36,637,290	38,421,464	39,148,760	0.98%	0.63%	0.86%

Legend: % = percent; ROI = region of influence.
Source: U.S. Census Bureau 2010, 2015, and 2018a.

SANDAG (2013) developed population projections for the San Diego Region (approximating San Diego County) from 2020 to 2050. By 2050, it is projected that the San Diego Region will have a population of nearly 4.1 million, 18.4 percent larger than its projected 2020 population. This projected annual growth from 2020 to 2050 would be an average of 0.61 percent per year, which represents slightly more than half the average annual growth rate that was measured for San Diego County from 2010 to 2018 (1.16 percent per year).

3.5.2.2 Employment and Income

Table 3.5-2 shows Census Bureau (2018a) labor force data in the ROI, the city, county, and statewide for the year 2018. The ROI and both the city and county had higher labor force participation rates and lower unemployment rates than the state, and those measures were better for the ROI than either the city or the county. The armed forces population, as a percentage of the population 16 years and over, was much higher in the ROI (15.7 percent) than the city (2.5 percent), county (2.8 percent), or the state (0.4 percent).

More recent data from the Bureau of Labor Statistics (2020) indicate that unemployment has substantially increased since 2018. As of April 2020, the unemployment rate for the San Diego metropolitan area had increased to 15.3 percent and the California unemployment rate had increased to 16.3 percent as of May 2020. Some of this increase may be attributed to the pandemic.

Table 3.5-2 Labor Force Characteristics, 2018

Characteristic	*ROI*	*City of San Diego*	*San Diego County*	*California*
Population 16 Years and Over	23,855	1,150,707	2,656,740	31,109,195
In Labor Force	17,296	776,991	1,745,186	19,758,291
Civilian Labor Force	13,551	747,654	1,671,892	19,630,514
Employed	12,744	700,233	1,564,930	18,309,012
Unemployed	807	47,421	106,962	1,321,502
Armed Forces	3,745	29,337	73,294	127,777
Not in Labor Force	6,559	373,716	911,554	11,350,904
Labor Force Participation Rate	72.5%	67.5%	65.7%	63.5%
Unemployment Rate	4.7%	6.1%	6.1%	6.7%

Legend: % = percent; ROI = region of influence.
Source: Census Bureau, 2018a.

The Census Bureau (2018a) provides data on civilian employment by industry in the ROI, City of San Diego, San Diego County, and the State of California for the year 2018. In 2018, the educational services, and health care and social assistance industry was the largest employer in each of the regions. A smaller portion of ROI residents worked in the construction industry and retail trade industry than the city county, and state. Compared to the city, county, and state, a larger portion of ROI residents worked in the finance and insurance, and real estate and rental and leasing industry; the arts, entertainment, and recreation, and accommodation and food services industry; and the professional, scientific, and management, and administrative and waste management services industry. As of 2018, in San Diego County, there were approximately 92,000 workers in the construction industry.

Table 3.5-3 shows the Census Bureau (2018a) per capita income, median household income, and the percentage of households with incomes below the poverty line in the ROI, City of San Diego, San Diego County, and State of California for the year 2018. In 2018, the ROI had higher per capita income and median household income than the city, county, and state, and had a lower portion of the population with incomes below the poverty line. Per capita income in the ROI ($47,431) was 35 percent higher than that of the state ($35,021) and the portion of the population with incomes below the poverty line was 0.8 times that of the state (11.7 percent compared to 14.3 percent). According to the Bureau of Economic Analysis, in 2018, San Diego County had the 18th highest per capita income of the 58 counties in California, and per capita income grew 5.7 percent from 2017 to 2018. Data from the Impact Analysis for Planning (IMPLAN) model indicate that total income for San Diego County, in 2018, was approximately $211.4 billion.

Table 3.5-3 Income Statistics, 2018

Statistic	*ROI*	*City of San Diego*	*San Diego County*	*California*
Per Capita Income	$47,431	$39,066	$36,156	$35,021
Median Household Income	$78,326	$75,456	$74,855	$71,228
Percentage with Income below the Poverty Line	11.7%	13.8%	12.5%	14.3%

Legend: % = percent; ROI = region of influence.
Source: Census Bureau, 2018a.

3.5.2.3 Housing

Table 3.5-4 shows Census Bureau (2018a) data on housing characteristics in the ROI, City of San Diego, San Diego County, and State of California for the year 2018. In 2018, there were 11,442 housing units in the ROI. Of those units, 10,764 were occupied and 678 were vacant (a vacancy rate of 5.9 percent). Median gross rent ($1,629 per month) and median housing value ($671,500) in the ROI were higher than the state, county, and city. The percentage of renters in the ROI whose gross rent was 35 percent or more of their income was 44.4 percent, lower than each the city, county, and state.

Table 3.5-4 Housing Characteristics, 2018

Characteristic	*ROI*	*City of San Diego*	*San Diego County*	*California*
Total Housing Units	11,442	540,644	1,204,884	14,084,824
Occupied Housing Units	10,764	503,463	1,118,980	12,965,435
Vacant Housing Units	678	37,181	85,904	1,119,389
Vacancy Rate	5.9%	6.9%	7.1%	7.9%
Median Gross Rent	$1,629	$1,611	$1,569	$1,429
Median Value	$671,500	$569,100	$526,300	$475,900
% Paying Gross Rent 35% or more of Income	44.4%	44.5%	46.8%	45.9%

Legend: % = percent; ROI = region of influence.
Source: Census Bureau, 2018a.

Census Bureau (2018a) data on housing unit type in the State of California, San Diego County, the City of San Diego, and the ROI show that, in 2018, 58.5 percent of the ROI housing units were multi-unit (e.g., apartment or condominium), far exceeding the rate for the state. Projections developed by SANDAG (2013) indicate the number of housing units in the San Diego Region will increase by 19.4 percent from 2020 to 2050, with most of that growth coming in the form of multi-unit dwellings.

The report associated with the 15th Annual Demographia International Housing Affordability Survey (Demographia, 2019) presented an analysis of the housing crisis in California. The analysis indicated that California has the most serious affordability problem in the United States, has the worst homelessness problem in the nation, and that both of these problems are getting worse. The analysis further indicated that these problems have contributed to an accelerating decline in state population growth rates. The analysis suggests that increasing the supply of market rate housing would help to address these problems. The report associated with the 16th Annual Demographia International Housing Affordability Survey (Demographia, 2020) indicated that San Diego had the 4th least affordable housing market in

California, 5th least affordable in the United States, and 12th least affordable in the world. A study conducted at Florida International University (2019) indicated that, in terms of national rank, San Diego had the 3rd highest rate of renters, the 5th highest rental prices, 5th highest share of homeowners who have monthly housing costs in excess of 35 percent of their income, and the 2nd lowest income remaining after housing expenses. The most recent available data indicates that there are no homeless encampments or locations where a substantial number of homeless sleep/shelters that would be affected by the Proposed Action Alternatives (i.e., the data show zero overnight homeless in census tract 65) (San Diego Regional Task Force on Homelessness, 2018).

3.5.2.4 Economic Activity

The Bureau of Economic Analysis (2018a) estimated that gross county product (GCP) for San Diego County was $219.3 billion (ranked the 4th largest economy in the state), up 4.1 percent from 2017. The 4.1 percent growth was the 18th fastest in California. Gross State Product for California in 2018 was $12 trillion, equaling about 14.5 percent of total U.S. gross domestic product; the 2018 California gross domestic product was up 4.3 percent from 2017 levels. Partial year data for 2019 indicate that California continued to grow, but at a slower pace than growth from 2017 to 2018, and that California was growing at the 26th fastest rate of all 50 states. The largest industry contributors to the California gross domestic product were the professional, scientific, and technical services industry; the information industry; and the retail trade industry (Bureau of Economic Analysis, 2018b). As noted above in Section 3.5.2.2, the ROI had a higher concentration of employment than the state in professional, scientific, and management fields but a lower concentration in the retail trade industry.

3.5.2.5 State and Local Government Revenue

The City of San Diego (2020a) reported that revenue for its 2019-2020 adopted operating budget totaled approximately $4.2 billion, up 20.7 percent from the previous year. Charges for current services ($1.6 billion) and property tax revenue ($634.7 million) were the largest contributors to revenue. Revenue from each of these sources increased over 2018-2019 levels by 9.6 percent and 7.5 percent, respectively. According to San Diego County (2019), county revenue was approximately $4.5 billion in Fiscal Year 2019. About half of that ($2.3 billion) came from intergovernmental revenue (primarily funding from the federal and state governments). Other major sources of revenue were property taxes ($741 million), taxes other than current secured (primarily sales taxes, $525 million), and charges for current services (including utilities and some emergency services, $406 million). State of California revenue for Fiscal Year 2019-2020 was $151.6 billion (California Department of Finance, 2020).

3.5.3 Environmental Consequences

This section summarizes the approach to analysis for estimating population, economic, and fiscal impacts associated with the Proposed Action. Estimates for population increase consider geographic mobility; for construction, whether a population increase would be needed to support construction, and, for operations to what extent population would in-migrate into San Diego County in response to additional housing units (for Alternatives 2 through 5 only). This section furthermore establishes the method for how determinations of significance are made for the population, economic, and fiscal impacts.

Information on the number of proposed housing units from Chapter 2, and projected persons per housing unit and occupancy rates from the market analyses (London Moeder, 2020) were used to develop estimates of the total population that would reside in the newly developed residential units included under Alternatives 2 through 5. Population estimates are presented for each alternative at full buildout of residential units, anticipated in the year 2050.

It is difficult to predict with certainty the degree to which new housing units would be consumed by local area residents or by people moving to the area from outside the region. Therefore, based on research conducted by the National Bureau of Economic Research (2005) that indicates the logarithmic change in housing units in high-performance metro areas is roughly equal to the logarithmic change in population, the change in total population for San Diego County is assumed to be equivalent to the population that would reside in newly developed units. The framework for how this assumption was applied to Alternatives 2 through 5 is that, for example: one-half of the population in the new housing units would come from within San Diego County and one-half would come from outside of San Diego County. This implies that county population would initially increase by one-half the total residents of new housing (as the other one-half would already be county residents). Following that, the vacant housing units in the county created by those residents moving into the new development would then become occupied by in-migrants from other counties. On a net basis, population in the county would increase by the same number as population in new project-related housing units.

Economic variables that are presented as results include jobs, labor income, (GCP, a measure of the value of goods and services produced in a county in a year), and local government revenue. Estimates of these variables are produced by the IMPLAN economic model for San Diego County to calculate economic impacts associated with the Proposed Action Alternatives. While the IMPLAN model is based on 2018 data, estimates of financial impacts are presented in year 2020 dollars. Additional information on the economic model is provided in Appendix G.

Total jobs, labor income, GCP, and local government revenue presented in this section consist of direct, indirect, and induced effects. Direct effects are associated with the proposed developments themselves and include construction and operations jobs, the incomes earned by those workers, the GCP associated with initial purchases of construction materials and supplies in the county, and goods and services that facilitate personal consumption and business operations, along with the government revenue generated through those activities. Indirect effects are generated by the spending of businesses that would supply goods and services that facilitate construction and operations. Indirect jobs include jobs at companies that supply construction materials and supplies, or support jobs related to operations of, for instance, new retail space. Indirect jobs extend to include jobs related to the manufacture of products used to construct facilities and support business operations. Indirect labor income includes the income earned by people working indirect jobs. Indirect GCP includes the total sales volume related to the supply of goods and services. Induced effects are the result of spending of the wages and salaries of the direct and indirect new employees on items such as food, housing, transportation, and medical services. This spending creates induced employment in nearly all sectors of the economy, especially the service sectors.

Importantly, not all jobs, labor income, and GCP would be new to the county. While construction and operations at the project site would provide additional work for the current construction workforce and provide increased capacity for businesses to expand, some of the workers and businesses would already be present in San Diego County. Therefore, economic effects should be considered “generated or sustained” rather than with an implication that all effects would be entirely new. If property leaves federal ownership, property owners would pay local taxes on the value of their property and would be subject to local fees and assessments to the same extent as similarly situated entities and developments within the City of San Diego. If instead development were to occur on federally owned property under a lease scenario, the developer's possessory interest in federal land and improvements thereto would likely be taxable in accordance with the Constitution of the State of California and laws enacted thereunder. Other local fees and assessments would only apply in this latter scenario to the extent the Navy were to enter into an agreement with the City granting the City this authority over the private development on federal land. Under both scenarios, the NAVWAR building and underlying real property will not be subject to state or local taxation, nor to any other state or local fees or assessments.

Changes in the population are considered neither beneficial nor adverse, as they tend to have contrasting effects; larger populations are associated with greater economic activity (generally beneficial) as well as strains on public services (generally adverse). Impacts to public services induced by population growth are addressed in Section 3.10, *Public Services*. Because improvements in economic measures tend to be considered positive, economic impacts are categorized as beneficial if analysis shows that an economic measure would improve. Likewise, if analysis shows that an economic measure would decline, the impact is categorized as less than significant (if the decline would not be substantial relative to the regional economy) or significant (if the decline would be substantial relative to the regional economy). Additional information on the approach to the socioeconomic analysis and more detailed results are presented in Appendix G.

3.5.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives at OTC would not occur and there would be no impacts to socioeconomic resources with the implementation of the No Action Alternative.

3.5.3.2 Alternative 1: NAVWAR-Only Redevelopment

Construction Phase

Population

The construction industry in San Diego County (numbering 92,000 workers) and surrounding areas is sufficient to supply the necessary workforce to complete the proposed construction projects without additional workers relocating to the county. Therefore, no change in permanent population is anticipated during the construction phase for Alternative 1 and no impacts to population would occur in the ROI.

Employment and Income

Alternative 1 would generate an estimated average of 938 jobs and $58.3 million in labor income, annually, over a 5-year period (from 2021-2025). This impact would be considered beneficial but would represent less than 0.1 percent increases over baseline levels and not be significant relative to overall county employment and labor income.

Economic Activity

Alternative 1 would generate an estimated $94.7 million in GCP, annually, over a 5-year period (from 2021-2025). This impact would be beneficial but would represent less than a 0.1 percent increase over baseline levels and is not considered significant relative to overall GCP.

Housing

Because the construction industry of San Diego County and surrounding areas could support construction and would not lead to a change in permanent population, there would be no additional demand for housing due to construction activities under Alternative 1. Because there would be no additional demand for housing, Alternative 1 would have no effect on housing in the ROI.

State Local Government Revenue

Alternative 1 would generate an estimated $5.0 million in state revenue, $645,000 in county revenue, and $1.3 million in city revenue, annually, over a 5-year period (from 2021-2025). This impact would be beneficial but would represent less than 0.05 percent increases over baseline levels and not be considered significant relative to overall state and local government revenues.

Operations Phase

Population

With no proposed change in staffing, NAVWAR operations under Alternative 1 would not directly generate a change in the permanent population of the ROI. However, with redeveloped facilities that would better support mission requirements, it is possible that NAVWAR operations over time may yield a marginal indirect and unintended increase in personnel if any growth in operations were to result from facility improvements. Such an increase would be inconsequential relative to the size of the current and projected population of the area and would therefore be less than significant.

Employment and Income

With no proposed change in staffing, NAVWAR operations under Alternative 1 would result in no direct impact to employment and income in the ROI. As noted above for population, it is possible that facility improvements and additional operational capacity could yield marginal expansion of NAVWAR operations at OTC, which could potentially result in a marginal indirect and unintended increase in federal jobs at the site. Any such increase would be inconsequential relative to local employment and income levels in the area and would represent a less than significant beneficial impact.

Economic Activity

As noted above, Alternative 1 would not yield any direct change in economic activity. Some potential for indirect growth in operations attributable to improved facilities and mission capacity may result in a limited increase in economic activity, but any such increase would be marginally beneficial and less than significant.

Housing

With no direct increase in jobs, income, or economic activity expected to result from NAVWAR operations under Alternative 1, no direct impact to housing is anticipated. Any small indirect increase in employment related to improved operational capacity and facility condition (as discussed above) would be marginally beneficial and less than significant.

State and Local Government Revenue

Operation of OTC facilities redeveloped under Alternative 1 would not change state and local government revenues and would therefore have no direct or indirect impact on such revenues or any socioeconomic factors related to such revenues.

3.5.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Construction Phase

Population

The construction industry in San Diego County (numbering 92,000 workers) and surrounding areas is sufficient to supply the necessary workforce to complete the proposed construction projects without additional workers relocating to the county. Therefore, no change in permanent population is anticipated during the construction phase for Alternative 2 and no impacts to population would occur in the ROI.

Employment and Income

Table 3.5-5 shows the estimated number of construction jobs that would be generated under Alternative 2, on an annual average basis by type of development and over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of 2,651 jobs annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential buildings would generate an estimated 857 jobs annually and construction of commercial buildings would generate an estimated 155 jobs annually (a total of 1,012 jobs per year over the period). The increase in employment would be considered a beneficial impact but would represent less than a 0.2 percent increase over baseline levels and not be significant relative to overall county employment.

Table 3.5-5 Alternative 2 Jobs from Construction, Annual Averages by Development Type

Development Type	*2021-2025*	*2026-2049*
Navy OTC	2,651	0
Residential	0	857
Commercial	0	155
Total	**2,651**	**1,012**

Table 3.5-6 shows estimated labor income from Alternative 2 construction activities, on an annual average basis by development type and over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $165.5 million in labor income annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential buildings would generate an estimated $53.4 million annually and construction of commercial buildings would generate an estimated $9.7 million annually (a total of $63 million in labor income per year over the period). The increase in labor income would be considered a beneficial impact but would represent less than a 0.1 percent increase over baseline levels and would not be significant relative to overall county labor income.

Table 3.5-6 Alternative 2 Labor Income from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	*2021-2025*	*2026-2049*
Navy OTC	$165,531,513	$0
Residential	$0	$53,405,891
Commercial	$0	$9,660,064
Total	**$165,531,513**	**$63,065,955**

Economic Activity

Table 3.5-7 shows estimated GCP from Alternative 2 construction activities, on an annual average basis by development type and over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $232.3 million in GCP annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential buildings would generate an estimated $83.8 million annually and construction of commercial buildings would generate an estimated $13.6 million annually (a total of $97.4 million in GCP per year over the period). The increase in economic activity would be considered a beneficial impact but would represent less than a 0.1 percent increase over baseline levels and would not be significant relative to overall GCP.

Table 3.5-7 Alternative 2 Gross County Product from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	***2021-2025***	***2026-2049***
Navy OTC	$232,290,728	$0
Residential	$0	$83,808,721
Commercial	$0	$13,555,989
Total	**$232,290,728**	**$97,364,709**

Housing

Because the construction industry in San Diego County and surrounding areas can support the proposed construction and would not lead to a change in permanent population, there would be no additional construction-related demand for housing under Alternative 2. Because there would be no additional demand for housing, no housing-related impacts would occur from construction of Alternative 2.

State and Local Government Revenue

Table 3.5-8 shows the estimated annual average government revenue for the State of California, San Diego County, and city governments (primarily the City of San Diego) that would be attributable to construction activities over multiple timeframes under Alternative 2. Navy OTC construction would generate an estimated total of $13.5 million annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential and commercial buildings would generate an estimated $5.4 million annually. The increase in government revenue (a 0.01 percent increase over state baseline levels, a 0.02 percent increase over county levels, and a 0.3 percent increase over city levels) would be considered a beneficial impact but not significant relative to overall state and local government revenue.

Table 3.5-8 Alternative 2 State and Local Government Revenue from Construction, Annual Averages (2020 dollars)

Government	***2021-2025[1]***	***2026-2049[2]***
State	$11,107,288	$4,251,606
County	$1,102,094	$399,432
City	$1,302,423	$803,936
Total	**$13,511,804**	**$5,454,974**

Notes: [1] 2021-2025 timeframe includes Navy OTC construction only.
[2] 2026-2049 timeframe includes residential and commercial construction.

Operations Phase

Population

As new housing units are completed as proposed under Alternative 2, the population in the ROI, City of San Diego, and San Diego County would increase. It is anticipated that development of new housing units would be completed by the year 2049, and that new housing developments would reach maximum occupancy by 2050. Under Alternative 2, it is estimated that an additional population, as of 2050 and continuing for the foreseeable future would equal 9,480 people. Compared to 2018 levels, that estimate represents a 25.8 percent increase in the ROI population, a 0.7 percent increase in the City of San Diego population, and a 0.3 percent increase in the San Diego County population by 2050. As described in Section 3.5.3, impacts of changes in the population are neither considered beneficial nor adverse as they tend to lead to both; the additional population would increase demands on public services (see Section 3.10, *Public Services*) while concurrently adding to government revenue and overall economic activity.

Employment and Income

Similar to Alternative 1, there would be no direct impacts to employment or income from the Navy OTC operations aspect of Alternative 2. However, there would be potential new jobs and income generated from the proposed private development aspects of this alternative, as described below.

The development of residential units and commercial space would have beneficial impacts on employment and income. New residential developments would generate on-site operations jobs (and associated income) and the additional housing would draw in new residents. Spending by those new residents would induce the creation and sustainment of other jobs (and associated income). New commercial development would generate and sustain jobs (and associated income) within the newly developed office, retail, restaurant, and hotel space. For Alternative 2, these impacts are shown in Table 3.5-9, at full buildout in 2050. These impacts would continue on an annual basis, in a steady-state for the foreseeable future. The increase in employment and income would be considered a beneficial impact that would represent, respective 0.8 percent and 0.4 percent, increases over baseline levels that would not be significant relative to overall county employment and labor income.

Table 3.5-9 Alternative 2 Employment and Income from Residential and Commercial Operations, Annual, 2050 Forward

Impact Type	*Residential*	*Commercial*	*Total*
Jobs	4,835	8,184	**13,019**
Labor Income[1]	$250,382,466	$529,972,185	**$780,354,651**

Note: [1] Dollar based values are shown in year 2020.

Economic Activity

Similar to Alternative 1, there would be no direct impacts to economic activity from the Navy OTC operations aspect of Alternative 2. However, there would be potential new economic activity generated by the proposed private development aspects of this alternative, as described below.

The development of residential units and commercial space would have beneficial impacts on economic activity. New residential developments would generate on-site operations expenditures and the additional housing would draw in new residents. Spending by new residents would induce economic activity at local businesses such as grocery stores, restaurants, and personal services establishments. Businesses in the new commercial development would make company expenditures that would generate additional economic activity in industries such as wholesale trade, legal services, accounting services, and computer systems. For Alternative 2, these impacts are shown in Table 3.5-10, at full buildout in 2050. These impacts would continue on an annual basis, in a steady-state for the foreseeable future. The increase in economic activity would be a beneficial impact that would represent a 0.6 percent increase over baseline levels, not considered significant relative to overall GCP.

Table 3.5-10 Alternative 2 Gross County Product from Residential and Commercial Operations, Annual, 2050 Forward (2020 dollars)

Impact Type	*Residential*	*Commercial*	*Total*
Gross County Product	$492,214,716	$856,208,052	**$1,348,422,768**

Housing

Similar to Alternative 1, there would be no direct impacts on housing from the Navy OTC operations aspect of Alternative 2. However, there would be potential changes to housing supply and demand associated with the proposed private development aspects of this alternative, as described below.

Under Alternative 2, an estimated 5,267 new housing units would be built and occupied starting in 2050 (an increase of 0.5 percent over the county baseline), with an estimated $190.4 million in rents paid by occupants annually. These figures would continue on an annual basis, in a steady-state for the foreseeable future.

Research conducted for the Socioeconomic Study (Appendix G, Section 4.2.3.3) concludes that adding to housing supply (such as would occur under Alternative 2) generally does not lead to higher housing prices. Conversely, research indicates that communities that limit the development of new housing units can cause housing shortages that can push prices higher relative to a condition where new housing development does occur. As such, under a condition without new housing development, the introduction of new housing reduces housing prices and does not adversely affect affordability. Furthermore, under Alternative 2 the number of affordable housing units in San Diego would increase relative to a condition without it. This would be due to developers of OTC Site 1 and OTC Site 2 likely taking advantage of State of California incentives to develop affordable units as a percentage of total units being developed. Without Alternative 2, NAVWAR operations would continue unchanged from existing conditions on OTC, and no affordable units would be built on the sites. Because housing at OTC would not lead to increased rents in the region, impacts to housing affordability would be less than significant.

State and Local Government Revenue

Similar to Alternative 1, there would be no direct impacts to government revenues from the Navy OTC operations aspect of Alternative 2. However, there would be potential government revenue impacts from the proposed private development aspects of this alternative, as described below.

Table 3.5-11 shows the State of California, San Diego County, and city governments (primarily the City of San Diego) revenue that would be attributable to residential and commercial operations activities (from sources described above under Employment and Income). For Alternative 2, approximately $79 million would accrue to the state government, $9.4 million to the county government, and $20.0 million to city governments. This revenue would occur on an annual basis starting in 2050 and continue in a steady-state for the foreseeable future. Most of the revenue for the state government would accrue through sales and personal income taxes. Most of the revenue accruing to the county government would be through property taxes. Most of the revenue for city governments would be through sales and property taxes. The increase in government revenues (a 0.1 percent increase over state baseline levels, a 0.2 percent increase over county levels, and a 0.5 percent increase over city levels) would be considered a beneficial impact but would not be significant relative to overall state and local government revenue.

Table 3.5-11 Alternative 2 State and Local Government Revenue from Operations, Annual, 2050 Forward (2020 dollars)

Government	*Residential*	*Commercial*	*Total*
State	$38,084,676	$40,630,428	$78,715,104
County	$4,903,764	$4,456,931	$9,360,695
City	$11,034,108	$8,981,810	$20,015,918
Total	**$54,022,548**	**$54,069,169**	**$108,091,717**

3.5.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Construction Phase

Population

The construction industry of San Diego County (numbering 92,000 workers), and surrounding areas, is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county. Therefore, no permanent population increase is anticipated in association with construction for Alternative 3.

Employment and Income

Table 3.5-12 shows estimated jobs from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of 2,651 jobs annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential buildings would generate 572 jobs annually and construction of commercial buildings would generate 101 jobs annually (a total of 673 jobs per year over the period). The increase in employment would be a beneficial impact but would represent less than a 0.2 percent increase over baseline levels and not considered significant relative to overall county employment.

Table 3.5-12 Alternative 3 Jobs from Construction, Annual Averages by Development Type

Development Type	*2021-2025*	*2026-2049*
Navy OTC	2,651	0
Residential	0	572
Commercial	0	101
Total	**2,651**	**673**

Table 3.5-13 shows estimated labor income from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $165.5 million in labor income annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential buildings would generate $35.6 million annually and construction of commercial buildings would generate about $6.3 million annually (a total of $41.9 million in labor income per year over the period). The increase in labor income would be a beneficial impact but would represent less than a 0.1 percent increase over baseline levels and not considered significant relative to overall county labor income.

Table 3.5-13 Alternative 3 Income from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	*2021-2025*	*2026-2049*
Navy OTC	$165,531,513	$0
Residential	$0	$35,603,927
Commercial	$0	$6,284,971
Total	**$165,531,513**	**$41,888,899**

Economic Activity

Table 3.5-14 shows estimated GCP from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $232.3 million in GCP annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential buildings would generate $55.9 million annually and construction of commercial buildings would generate about $8.8 million annually (a total of $64.7 million in GCP per year over the period). The increase in economic activity would be a beneficial impact but would represent a 0.1 percent increase over baseline levels and not considered significant relative to overall GCP.

Table 3.5-14 Alternative 3 Gross County Product from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	*2021-2025*	*2026-2049*
Navy OTC	$232,290,728	$0
Residential	$0	$55,872,481
Commercial	$0	$8,819,714
Total	**$232,290,728**	**$64,692,194**

Housing

Because the construction industry of San Diego County and surrounding areas could support construction and would not lead to a change in permanent population, there would be no additional demand for housing due to construction activities under Alternative 3. Because there would not be additional demand for housing, there would be no impact.

State and Local Government Revenue

Table 3.5-15 shows annual average revenue for the State of California, San Diego County, and city governments (primarily the City of San Diego) that would be attributable to construction activities over multiple timeframes under Alternative 3. Navy OTC construction would generate an estimated total of $13.5 million annually from 2021 to 2025. Over the 2026 to 2049 period, construction of residential and commercial buildings would generate $3.6 million annually. The increase in government revenue would be considered a beneficial impact but not significant relative to overall state and local government revenue (less than 0.05 percent increases over baseline levels).

Table 3.5-15 Alternative 3 State and Local Government Revenue from Construction, Annual Averages (2020 dollars)

Government	*2021-2025*[1]	*2026-2049*[2]
State	$11,107,288	$2,823,998
County	$1,102,094	$265,256
City	$1,302,423	$533,878
Total	**$13,511,804**	**$3,623,133**

Notes: [1] 2021-2025 timeframe includes Navy OTC construction only.
[2] 2026-2049 timeframe includes residential and commercial construction.

Operations Phase

Population

Similar to Alternative 1, there would not be a population increase from the Navy OTC operations aspect of Alternative 3. However, there would be potential population impacts from the proposed private development aspects of this alternative, as described below.

As new housing units are completed, the population in the ROI, City of San Diego, and San Diego County would increase. It is anticipated that development of new housing units would be completed by the year 2049, and that new housing developments would reach maximum occupancy by 2050. Under Alternative 3, it is estimated that an additional population, as of 2050 and continuing for the foreseeable future would equal 6,320 people. Compared to 2018 levels, that estimate represents an 18.9 percent increase in the ROI population, a 0.4 percent increase in the City of San Diego population, and a 0.2 percent increase in the San Diego County population by 2050. As described in Section 3.5.3, impacts of changes in the population are neither considered beneficial nor adverse as they tend to lead to both; the additional population would increase demands on public services (see Section 3.10, *Public Services*) while concurrently adding to government revenue and overall economic activity.

Employment and Income

Similar to Alternative 1, there would not be impacts on employment or income from the Navy OTC operations aspect of Alternative 3. However, there would be potential employment/income impacts from the proposed private development aspects of this alternative, as described below.

The development of residential units and commercial space would have beneficial impacts on employment and income, from the same sources as described for Alternative 2. For Alternative 3, these impacts are shown in Table 3.5-16. At full buildout, starting in 2050 and continuing in a steady-state for the foreseeable future, there would be an estimated 8,566 total jobs (3,227 related to residential development and 5,339 related to commercial development) and $512.1 million in annual income from those jobs ($166.9 million related to residential development and $345.2 million related to commercial development). The increase in employment and income would be considered a beneficial impact that would represent, respective 0.55 percent and 0.24 percent, increases over baseline levels that would not be significant relative to overall county employment and labor income.

Table 3.5-16 Alternative 3 Jobs and Income from Residential and Commercial Operations, Annual, 2050 Forward

Impact Type	*Residential*	*Commercial*	*Total*
Jobs	3,227	5,339	**8,566**
Labor Income[1]	$166,921,645	$345,194,525	**$512,116,170**

Note: [1] Dollar based values are shown in year 2020.

Economic Activity

Similar to Alternative 1, there would not be impacts on economic activity from the Navy OTC operations aspects of Alternative 3. However, there would be potential economic activity impacts from the proposed private development aspects of this alternative, as described below.

The development of residential units and commercial space would have beneficial impacts on GCP, from the same sources as described for Alternative 2. For Alternative 3, these impacts are shown in Table 3.5-17. At full buildout, starting in 2050 and continuing in a steady-state for the foreseeable future, there would be an estimated $886.0 million in total GCP ($328.1 million related to residential development and $557.8 million related to commercial development). The increase in economic activity would be a beneficial impact that would represent a 0.4 percent increase over baseline levels, not considered significant relative to overall GCP.

Table 3.5-17 Alternative 3 Gross County Product from Residential and Commercial Operations, Annual, 2050 Forward (2020 dollars)

Impact Type	*Residential*	*Commercial*	*Total*
Gross County Product	$328,143,143	$557,780,529	**$885,923,672**

Housing

Similar to Alternative 1, there would not be impacts on housing from the Navy OTC operations aspects of Alternative 3. However, there would be potential housing impacts from the proposed private development aspects of this alternative, as described below.

Under Alternative 3, an estimated 3,511 new housing units would be occupied starting in 2050 (an increase of 0.3 percent over the county baseline) with an estimated $126.9 million in rents paid by occupants annually. These figures would continue on an annual basis, in a steady-state for the foreseeable future.

Similar to Alternative 2, Alternative 3 would add to housing supply and to the number of affordable housing units relative to a condition without any housing being developed. Therefore, impacts to housing affordability would be less than significant and would be potentially beneficial.

State and Local Government Revenue

Similar to Alternative 1, there would not be impacts on government revenue from the Navy OTC operations aspect of Alternative 3. However, there would be potential government revenue impacts from the proposed private development aspects of this alternative, as described below.

Table 3.5-18 shows the State of California, San Diego County, and city governments (primarily the City of San Diego) revenue attributable to residential and commercial operations activities (from sources described above under Employment and Income). For Alternative 3, approximately $52.0 million would accrue to the state government, $6.2 million to the county government, and $13.4 million to city governments. This revenue would occur on an annual basis starting in 2050 and continue in a steady-state for the foreseeable future. Most of the revenue for the state government would accrue through sales and personal income taxes. Most of the revenue accruing to the county government would be through property taxes. Most of the revenue for city governments would be through sales and property taxes. The increase in government revenues (a 0.03 percent increase over state baseline levels, a 0.1 percent increase over county levels, and a 0.3 percent increase over city levels) would be considered a beneficial impact but would not be significant relative to overall state and local government revenue.

Table 3.5-18 Alternative 3 State and Local Government Revenue from Operations, Annual, 2050 Forward (2020 dollars)

Government	*Residential*	*Commercial*	*Total*
State	$25,389,783	$26,608,435	$51,998,218
County	$3,269,176	$2,940,641	$6,209,817
City	$7,356,072	$5,926,423	$13,382,495
Total	**$36,015,031**	**$35,475,499**	**$71,490,530**

3.5.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

Construction Phase

Population

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

Employment and Income

Table 3.5-19 shows estimated jobs from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of 2,651 jobs annually from 2021 to 2025. From 2026 to 2034, while transit center, residential, and commercial development would occur, an estimated 3,955 jobs per year would be generated (2,455 related to transit center construction). Over the 2035 to 2049 period, construction of residential buildings would generate 1,299 jobs annually and construction of commercial buildings would generate 202 jobs annually (a total of 1,501 jobs per year over the period). The increase in employment would be considered a beneficial impact but would represent a 0.25 percent increase over baseline levels and not be significant relative to overall county employment.

Table 3.5-19 Alternative 4 Jobs from Construction, Annual Averages by Development Type

Development Type	*2021-2025*	*2026-2034*	*2035-2049*
Navy OTC	2,651	0	0
Transit Center	0	2,455	0
Residential	0	1,299	1,299
Commercial	0	202	202
Total	**2,651**	**3,955**	**1,501**

Table 3.5-20 shows estimated labor income from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $165.5 million in labor income, annually from 2021 to 2025. From 2026 to 2034, while transit center, residential, and commercial development would occur, an estimated $256.8 million in labor income per year would be generated ($163.3 million related to transit center construction). Over the 2035 to 2049 period, construction of residential buildings would generate $80.9 million in labor income annually and construction of commercial buildings would generate $12.6 million annually (a total of $93.5 million in labor income per year over the period). The increase in labor income would be a beneficial impact but would represent a 0.1 percent increase over baseline levels and not considered significant relative to overall county labor income.

Table 3.5-20 Alternative 4 Income from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	*2021-2025*	*2026-2034*	*2035-2049*
Navy OTC	$165,531,513	$0	$0
Transit Center	$0	$163,250,916	$0
Residential	$0	$80,918,017	$80,918,017
Commercial	$0	$12,608,135	$12,608,135
Total	**$165,531,513**	**$256,777,069**	**$93,526,152**

Economic Activity

Table 3.5-21 shows estimated labor income from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $232.3 million in GCP annually from 2021 to 2025. From 2026 to 2034, while transit center, residential, and commercial development would occur, an estimated $316.6 million in GCP per year would be generated ($171.9 million related to transit center construction). Over the 2035 to 2049 period, construction of residential buildings would generate $127 million in labor income annually and construction of commercial buildings would generate $17.7 million annually (a total of $144.7 million in GCP per year over the period). The increase in economic activity would be a beneficial impact but would represent a 0.1 percent increase over baseline levels and not considered significant relative to overall GCP.

Table 3.5-21 Alternative 4 Gross County Product from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	*2021-2025*	*2026-2034*	*2035-2049*
Navy OTC	$232,290,728	$0	$0
Transit Center	$0	$171,926,247	$0
Residential	$0	$126,982,910	$126,982,910
Commercial	$0	$17,693,024	$17,693,024
Total	**$232,290,728**	**$316,602,181**	**$144,675,934**

Housing

Because the construction industry of San Diego County and surrounding areas could support construction and would not lead to a change in permanent population, there would be no additional demand for housing due to construction activities under Alternative 4. Because there would not be additional demand for housing, there would be no impact.

State and Local Government Revenue

Table 3.5-22 shows annual average revenue for the State of California, San Diego County, and city governments (primarily the City of San Diego) that would be attributable to construction activities over multiple timeframes under Alternative 4. Navy OTC construction would generate an estimated total of $13.5 million annually from 2021 to 2025. From 2026-2034, while transit center, residential, and commercial development are all occurring, an estimated $20.8 million in government revenue would accrue annually. Over the 2026 to 2049 period, construction of residential and commercial buildings would generate $8.1 million annually. The increase in government revenue would be considered a beneficial impact but not significant relative to overall state and local government revenue (less than 0.07 percent increases over baseline levels).

Table 3.5-22 Alternative 4 State and Local Government Revenue from Construction, Annual Averages (2020 dollars)

Government	*2021-2025*[1]	*2026-2034*[2]	*2035-2049*[3]
State	$11,107,288	$16,122,606	$6,305,725
County	$1,102,094	$1,547,720	$591,696
City	$1,302,423	$3,114,256	$1,190,897
Total	**$13,511,804**	**$20,784,582**	**$8,088,318**

Notes: [1] 2021-2025 timeframe includes Navy OTC construction only.
[2] 2026-2034 timeframe includes Transit Center, residential, and commercial construction.
[3] 2035-2049 timeframe residential and commercial construction.

Operations Phase

Population

Like Alternative 1, there would not be a population increase from the Navy OTC operations aspect of Alternative 4. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no change in population related to transit center operations under Alternative 4.

The following are potential population impacts from the proposed private development aspects of Alternative 4. As new housing units are completed, the population in the ROI, City of San Diego, and San Diego County would increase. It is anticipated that development of new housing units would be completed by the year 2049, and that new housing developments would reach maximum occupancy by 2050. Under Alternative 4, it is estimated that an additional population, as of 2050 and continuing for the foreseeable future would equal 14,364 people. Compared to 2018 levels, that estimate represents a 34.6 percent increase in the ROI population, a 1.0 percent increase in the City of San Diego population, and a 0.4 percent increase in the San Diego County population. As described in Section 3.5.3, impacts of changes in a population are neither considered beneficial nor adverse as they tend to lead to both; the additional population would increase demands on public services (see Section 3.10, *Public Services*) while concurrently adding to government revenue and overall economic activity.

Employment and Income

Like Alternative 1, there would not be impacts on employment or income from the Navy OTC operations aspect of Alternative 4.

The following are potential employment and income impacts from the proposed private development aspects of Alternative 4. Development of residential units and commercial space would have beneficial impacts on employment and income, from the same sources as described for Alternative 2. For Alternative 4, these impacts are shown in Table 3.5-23. At full buildout, starting in 2050 and continuing in a steady-state for the foreseeable future, there would be an estimated 18,241 total jobs (7,331 related to residential development and 10,910 related to commercial development) and $1.1 billion in annual income from those jobs ($379.4 million related to residential development and $708.3 million related to commercial development). The increase in employment and income would be considered a beneficial impact that would represent, respective 1.2 percent and 0.5 percent, increases over baseline levels that would not be significant relative to overall county employment and labor income.

Table 3.5-23 Alternative 4 Employment and Income from Residential and Commercial Operations, Annual, 2050 Forward

Impact Type	*Residential*	*Commercial*	*Total*
Jobs	7,331	10,910	**18,241**
Labor Income[1]	$379,367,373	$708,301,506	**$1,087,668,879**

Note: [1] Dollar based values are shown in year 2020.

Economic Activity

Similar to Alternative 1, there would not be impacts on economic activity from the Navy OTC operations aspect of Alternative 4. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no change in population related to transit center operations under Alternative 4.

The following are potential economic activity impacts from the proposed private development aspects of Alternative 4. The development of residential units and commercial space would have beneficial impacts on GCP, from the same sources as described for Alternative 2. For Alternative 4, these impacts are shown in Table 3.5-24. At full buildout, starting in 2050 and continuing in a steady-state for the foreseeable future, there would be an estimated $1.89 billion in total GCP ($745.8 million related to residential development and $1.14 billion related to commercial development). The increase in economic activity would be a beneficial impact that would represent a 0.9 percent increase over baseline levels, not considered significant relative to overall GCP.

Table 3.5-24 Alternative 4 Gross County Product from Residential and Commercial Operations, Annual, 2050 Forward (2020 dollars)

Impact Type	*Residential*	*Commercial*	*Total*
Gross County Product	$745,779,872	$1,144,236,779	**$1,890,016,651**

Housing

Like Alternative 1, there would not be impacts on housing from the Navy OTC operations aspect of Alternative 4. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no impacts on housing related to transit center operations under Alternative 4.

The following are potential housing impacts from the proposed private development aspects of Alternative 4. Under Alternative 4, an estimated 7,980 new housing units would be occupied starting in 2050 (an increase of 0.7 percent over the county baseline) with an estimated $288.5 million in rents paid by occupants annually; these figures would continue on an annual basis, in a steady-state for the foreseeable future.

Similar to Alternative 2, Alternative 4 would add to housing supply and to the number of affordable housing units relative to a condition without housing being developed. Therefore, impacts to housing affordability would not be significant and would be potentially beneficial.

State and Local Government Revenue

Like Alternative 1, there would not be government revenue impacts from the Navy OTC operations aspect of Alternative 4. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no impacts on state and local government revenue related to transit center operations under Alternative 4.

The following are potential government revenue impacts from the proposed private development aspects of Alternative 4. Table 3.5-25 shows the State of California, San Diego County, and city governments (primarily the City of San Diego) revenue attributable to residential and commercial operations activities (from sources described above under Employment and Income). For Alternative 4, approximately $112.0 million would accrue to the state government, $13.4 million to the county government, and $28.7 million to city governments. This revenue would occur on an annual basis starting in 2050 and continue in a steady-state for the foreseeable future. Most of the revenue for the state government would accrue through sales and personal income taxes. Most of the revenue accruing to the county government would be through property taxes. Most of the revenue for city governments would be through sales and property taxes. The increase in government revenues (a 0.07 percent increase over state baseline levels, a 0.3 percent increase over county levels, and a 0.7 percent increase over city levels) would be considered a beneficial impact but would not be significant relative to overall state and local government revenue.

Table 3.5-25 Alternative 4 State and Local Government Revenue from Operations, Annual, 2050 Forward (2020 dollars)

Government	*Residential*	*Commercial*	*Total*
State	$57,704,052	$54,277,147	$111,981,199
County	$7,429,947	$5,949,642	$13,379,589
City	$16,718,344	$11,989,927	$28,708,271
Total	**$81,852,343**	**$72,216,715**	**$154,069,058**

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

Construction Phase

Population

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

Employment and Income

Table 3.5-26 shows estimated jobs from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of 2,651 jobs annually from 2021 to 2025. From 2026 to 2034, while transit center, residential, and commercial development would occur, an estimated 3,638 jobs per year would be generated (2,455 related to transit center construction). Over the 2035 to 2049 period, construction of residential buildings would generate 1,039 jobs annually and construction of commercial buildings would generate 144 jobs annually (a total of 1,184 jobs per year over the period). The increase in employment would be a beneficial impact but would represent a 0.2 percent increase over baseline levels and not be considered significant relative to overall county employment.

Table 3.5-26 Alternative 5 Jobs from Construction, Annual Averages by Development Type

Development Type	*2021-2025*	*2026-2034*	*2035-2049*
Navy OTC	2,651	0	0
Transit Center	0	2,455	0
Residential	0	1,039	1,039
Commercial	0	144	144
Total	**2,651**	**3,638**	**1,184**

Table 3.5-27 shows estimated labor income from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $165.5 million in labor income annually from 2021 to 2025. From 2026 to 2034, while transit center, residential, and commercial development would occur, an estimated $237 million in labor income per year would be generated ($163.3 million related to transit center construction). Over the 2035 to 2049 period, construction of residential buildings would generate $64.7 million in labor income annually and construction of commercial buildings would generate

$9 million annually (a total of $73.7 million in labor income per year over the period). The increase in labor income would be a beneficial impact but would represent a 0.1 percent increase over baseline levels and not considered significant relative to overall county labor income.

Table 3.5-27 Alternative 5 Income from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	2021-2025	2026-2034	2035-2049
Navy OTC	$165,531,513	$0	$0
Transit Center	$0	$163,250,916	$0
Residential	$0	$64,734,414	$64,734,414
Commercial	$0	$9,016,492	$9,016,492
Total	**$165,531,513**	**$237,001,822**	**$73,750,906**

Economic Activity

Table 3.5-28 shows estimated labor income from construction activities, on an annual average basis by development type, over relevant time periods. Navy OTC construction would generate an estimated total (including direct, indirect, and induced) of $232.3 million in GCP annually from 2021 to 2025. From 2026 to 2034, while transit center, residential, and commercial development would occur, an estimated $286.2 million in GCP per year would be generated ($171.9 million related to transit center construction). Over the 2035 to 2049 period, construction of residential buildings would generate $101.5 million in labor income annually and construction of commercial buildings would generate $12.7 million annually (a total of $114.2 million in GCP per year over the period). The increase in economic activity would be a beneficial impact but would represent a 0.1 percent increase over baseline levels and not considered significant relative to overall GCP.

Table 3.5-28 Alternative 5 Gross County Product from Construction, Annual Averages by Development Type (2020 dollars)

Development Type	2021-2025	2026-2034	2035-2049
Navy OTC	$232,290,728	$0	$0
Transit Center	$0	$171,926,247	$0
Residential	$0	$101,586,328	$101,586,328
Commercial	$0	$12,652,863	$12,652,863
Total	**$232,290,728**	**$286,165,438**	**$114,239,191**

Housing

Because the construction industry of San Diego County and surrounding areas could support construction and would not lead to a change in permanent population, there would be no additional demand for housing due to construction activities under Alternative 5. Because there would not be additional demand for housing, there would be no impact.

State and Local Government Revenue

Table 3.5-29 shows annual average revenue for the State of California, San Diego County, and city governments (primarily the City of San Diego) that would be attributable to construction activities over multiple timeframes under Alternative 5. Navy OTC construction would generate an estimated total of $13.5 million annually from 2021 to 2025. From 2026-2034, while transit center, residential, and commercial development are all occurring, an estimated $19.1 million in government revenue would accrue annually. Over the 2026 to 2049 period, the construction of residential and commercial buildings would generate $6.4 million annually. The increase in government revenue would be considered a beneficial impact but not significant relative to overall state and local government revenue (less than 0.07 percent increases over baseline levels).

Table 3.5-29 Alternative 5 State and Local Government Revenue from Construction, Annual Averages (2020 dollars)

Government	*2021-2025*[1]	*2026-2034*[2]	*2035-2049*[3]
State	$11,107,288	$14,789,662	$4,972,781
County	$1,102,094	$1,422,257	$466,233
City	$1,302,423	$2,861,734	$938,375
Total	**$13,511,804**	**$19,073,653**	**$6,377,389**

Notes: [1] 2021-2025 timeframe includes Navy OTC construction only.
[2] 2026-2034 timeframe includes Transit Center, residential, and commercial construction.
[3] 2035-2049 timeframe residential and commercial construction.

Operations Phase

Population

Like Alternative 1, there would not be a population increase from the Navy OTC operations aspect of Alternative 5. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no change in population related to transit center operations under Alternative 5.

The following are potential impacts to population from the proposed private development aspects of Alternative 5. As new housing units are completed, the population in the ROI, City of San Diego, and San Diego County would increase. It is anticipated that development of new housing units would be completed by the year 2049, and that new housing developments would reach maximum occupancy by 2050. Under Alternative 5, it is estimated that an additional population, as of 2050 and continuing for the foreseeable future would equal 11,491 people. Compared to 2018 levels, that estimate represents a 29.7 percent increase in the ROI population, a 0.8 percent increase in the City of San Diego population, and a 0.3 percent increase in the San Diego County population. As described in Section 3.5.3, impacts of changes in a population are neither considered beneficial nor adverse as they tend to lead to both; the additional population would increase demands on public services (see Section 3.10, *Public Services*) while concurrently adding to government revenue and overall economic activity.

Employment and Income

Like Alternative 1, there would not be impacts on employment or income from the Navy OTC operations aspect of Alternative 5.

There would be potential impacts to employment and income from the proposed private development aspects of Alternative 5. The development of residential units and commercial space would have beneficial impacts on employment and income, from the same sources as described for Alternative 2. For Alternative 5, these impacts are shown in Table 3.5-30. At full buildout, starting in 2050 and continuing in a steady-state for the foreseeable future, there would be an estimated 13,154 total jobs (5,865 related to residential development and 7,289 related to commercial development) and $770.0 million in annual income from those jobs ($303.5 million related to residential development and $466.5 million related to commercial development). The increase in employment and income would be considered a beneficial impact that would represent, respective 0.8 percent and 0.4 percent, increases over baseline levels that would not be significant relative to overall county employment and labor income.

Table 3.5-30 Alternative 5 Employment and Income from Residential and Commercial Operations, Annual, 2050 Forward

Impact Type	*Residential*	*Commercial*	*Total*
Jobs	5,865	7,289	**13,154**
Labor Income[1]	$303,493,898	$466,483,817	**$769,977,715**

Note: [1] Dollar based values are shown in year 2020.

Economic Activity

Like Alternative 1, there would not be impacts on economic activity from the Navy OTC operations aspect of Alternative 5. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no change in population related to transit center operations under Alternative 5.

Potential impacts to economic activity from the proposed private development aspects of Alternative 5 are as follows. The development of residential units and commercial space would have beneficial impacts on GCP, from the same sources as described for Alternative 2. For Alternative 5, these impacts are shown in Table 3.5-31. At full buildout, starting in 2050 and continuing in a steady-state for the foreseeable future, there would be an estimated $1.35 billion in total GCP ($596.6 million related to residential development and $754.3 million related to commercial development). The increase in economic activity would be a beneficial impact that would represent a 0.6 percent increase over baseline levels, not considered significant relative to overall GCP.

Table 3.5-31 Alternative 5 Gross County Product from Residential and Commercial Operations, Annual, 2050 Forward (2020 dollars)

Impact Type	*Residential*	*Commercial*	*Total*
Gross County Product	$596,623,897	$754,255,045	**$1,350,878,942**

Housing

Like Alternative 1, there would not be impacts on housing from the Navy OTC operations aspect of Alternative 5. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no impacts on housing related to transit center operations under Alternative 5.

There would be potential impacts in relation to housing from the proposed private development aspects of Alternative 5. Under Alternative 5, an estimated 6,384 new housing units would be occupied starting in 2050 (an increase of 0.6 percent over the county baseline) with an estimated $230.8 million in rents paid by occupants annually; these figures would continue on an annual basis, in a steady-state for the foreseeable future.

Similar to Alternative 2, Alternative 5 would add to housing supply and to the number of affordable housing units relative to a condition without housing being developed. Therefore, impacts to housing affordability would not be significant and would be potentially beneficial.

State and Local Government Revenue

Like Alternative 1, there would not be tax revenue impacts from the Navy OTC operations aspect of Alternative 5. For similar reasons as stated under Alternative 1, with respect to Navy OTC operations, there would be no impacts on government revenue related to transit center operations under Alternative 5.

Potential impacts to government revenue from the proposed private development aspects of Alternative 5, would be as follows. Table 3.5-32 shows the State of California, San Diego County, and city governments (primarily the City of San Diego) revenue attributable to residential and commercial operations activities (from sources described above under Employment and Income). For Alternative 5, approximately $82.6 million would accrue to the state government, $10.0 million to the county government, and $21.6 million to city governments. This revenue would occur on an annual basis starting in 2050 and continue in a steady-state for the foreseeable future. Most of the revenue for the state government would accrue through sales and personal income taxes. Most of the revenue accruing to the county government would be through property taxes. Most of the revenue for city governments would be through sales and property taxes. The increase in government revenues (a 0.05 percent increase over state baseline levels, a 0.2 percent increase over county levels, and a 0.5 percent increase over city levels) would be considered a beneficial impact but would not be significant relative to overall state and local government revenue.

Table 3.5-32 Alternative 5 State and Local Government Revenue from Operations, Annual, 2050 Forward (2020 dollars)

Government	*Residential*	*Commercial*	*Total*
State	$46,163,241	$36,438,098	$82,601,339
County	$5,943,957	$4,099,984	$10,043,941
City	$13,374,675	$8,263,929	$21,638,604
Total	**$69,200,608**	**$48,802,011**	**$114,283,884**

3.5.3.7 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No management practices, monitoring measures, and potential mitigation measures for socioeconomics are warranted based on the analysis in Section 3.5.3.

3.5.3.8 Summary of Effects and Conclusions

Impacts of the Proposed Action Alternatives would be beneficial in terms of employment, income, GCP, and state and local government revenue. Population would increase under Alternatives 2 through 5 as additional housing supply would, over time, attract new residents from outside San Diego County. Impacts of the population increase are considered to be neither adverse nor beneficial; the additional population would increase demands on public services (see Section 3.10, *Public Services*) while concurrently adding to government revenue and overall economic activity that fund such services. Impacts on housing under Alternatives 2 through 5 would not be beneficial but not significant; increased housing supply would not tend to increase prices or reduce affordability.

3.6 Cultural Resources

This section describes cultural resources in the Proposed Action area as well as the larger Area of Potential Effects (APE) which includes areas beyond the Proposed Action. Each alternative is analyzed to identify actions that could impact cultural resources within these areas. The extent or degree to which the impacts of the Proposed Action Alternatives could be avoided, minimized, or mitigated was considered when determining whether an alternative would have significant impacts on cultural resources.

The term cultural resource applies broadly to a variety of resources subject to consideration under the NEPA, the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, EO 13007 "Indian Sacred Sites," and similar laws. Included are historic properties as defined under NHPA. Historic properties consist of districts, sites, buildings, structures, or objects that are listed or eligible for listing in the National Register of Historic Places (NRHP). Under NEPA, the consideration of cultural resource issues may include properties that do not meet NRHP criteria, such as cemeteries and certain sacred sites (CEQ and Advisory Council on Historic Preservation [ACHP], 2013). For purposes of this EIS, cultural resources are divided into three categories: archaeological resources, architectural resources, and traditional cultural properties and sacred sites.

- *Archaeological resources* (prehistoric and historic): Any material remains of past human life or activity. Archaeological resources can date from prehistoric and historic periods and be present in sites and/or districts. Archaeological resources may contain Native American Graves Protection and Repatriation Act cultural items, including Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony.
    - Archaeological sites are the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains.
    - Archaeological districts comprise a significant concentration, linkage, or continuity of sites united historically or aesthetically by plan or physical development.
- *Architectural resources*: buildings, structures, objects, or districts of such resources.
    - Buildings principally shelter any form of human activity.
    - Structures are for purposes other than creating human shelter. Examples include roads and bridges, military structures such as water tanks and beacons, irrigation features, and others.
    - Objects are those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Examples include boundary markers, mileposts, monuments, statuary, and others.
    - Districts comprise a significant concentration, linkage, or continuity of buildings, structures, or objects united historically or aesthetically by plan or physical development.
- *Traditional cultural properties (TCPs) and sacred sites:* TCPs are historic properties that are eligible for inclusion in the NRHP because of their association with cultural practices and beliefs of a living community that are (a) rooted in the community's history and (b) important to maintaining the continuing cultural identity of the community (National Park Service, 1998).
    - Sacred sites are specific locations that are identified as sacred by virtue of their established religious significance to, or ceremonial use by, an Indian religion. Sacred sites may or may not be eligible for listing in the NRHP but are still subject to protection. Specifically, Indian sacred sites are any specific, discrete, narrowly delineated location that is identified by an

> Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion, provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

This analysis has been developed to describe cultural resources and potential impacts as a result of the Proposed Action Alternatives discussed in this EIS. Subsequent sections review the locations associated with the Proposed Action Alternatives, summarize cultural resources information, and analyze potential impacts.

3.6.1 Region of Influence

For purposes of this EIS, the ROI for cultural resources is referred to as the APE, as defined under the NHPA. The APE addressed in this document is based on the Proposed Action Alternatives used to analyze the potential impacts on cultural resources. APE boundaries are defined in consideration of potential effects on historic properties from ground disturbance, vibrations from construction and operation, and visual and auditory intrusions.

The APE is influenced by the scale and nature of the undertaking and may be different for various kinds of effects caused by the Proposed Action Alternatives. For this Proposed Action, the Navy determined that the APE includes the Proposed Action area (OTC Site 1 and OTC Site 2) as well as an area roughly defined by a 2-mile radius surrounding the Proposed Action area (Figure 3.6-1). This APE encompasses close to 10,500 acres.

During NHPA Section 106 consultation to support this EIS, the Navy will consult with the California State Historic Preservation Officer (SHPO) to receive concurrence with the Navy's determination that the APE accounts for all potential effects that may result from this undertaking in keeping with 36 CFR part 800.4(a)(1) and 36 CFR part 800.16(d).

3.6.2 Regulatory Framework

Cultural resources are governed by various federal laws and regulations, including the NHPA, Archaeological and Historic Preservation Act, American Indian Religious Freedom Act, Archaeological Resources Protection Act of 1979, and Native American Graves Protection and Repatriation Act. Federal agencies' responsibility for protecting historic properties is defined primarily by Sections 106 and 110 of the NHPA. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties. Section 110 of the NHPA requires federal agencies to establish—in conjunction with the Secretary of the Interior—historic preservation programs for the identification, evaluation, and protection of historic properties. Key implementing regulations include the Protection of Historic Properties (36 CFR part 800); the Criteria for Evaluation (36 CFR section 60.4); and the Curation of Federally owned and Administered Archaeological Collections (36 CFR part 79). Cultural resources also may be covered by state, local, and territorial laws.

The Archaeological Resources Protection Act establishes permitting procedures for conducting archaeological fieldwork on public lands as well as fines and penalties for unauthorized excavation. It also calls for the preservation of objects and associated records and prohibits public disclosure of information on the locations of archaeological resources if they could be damaged.

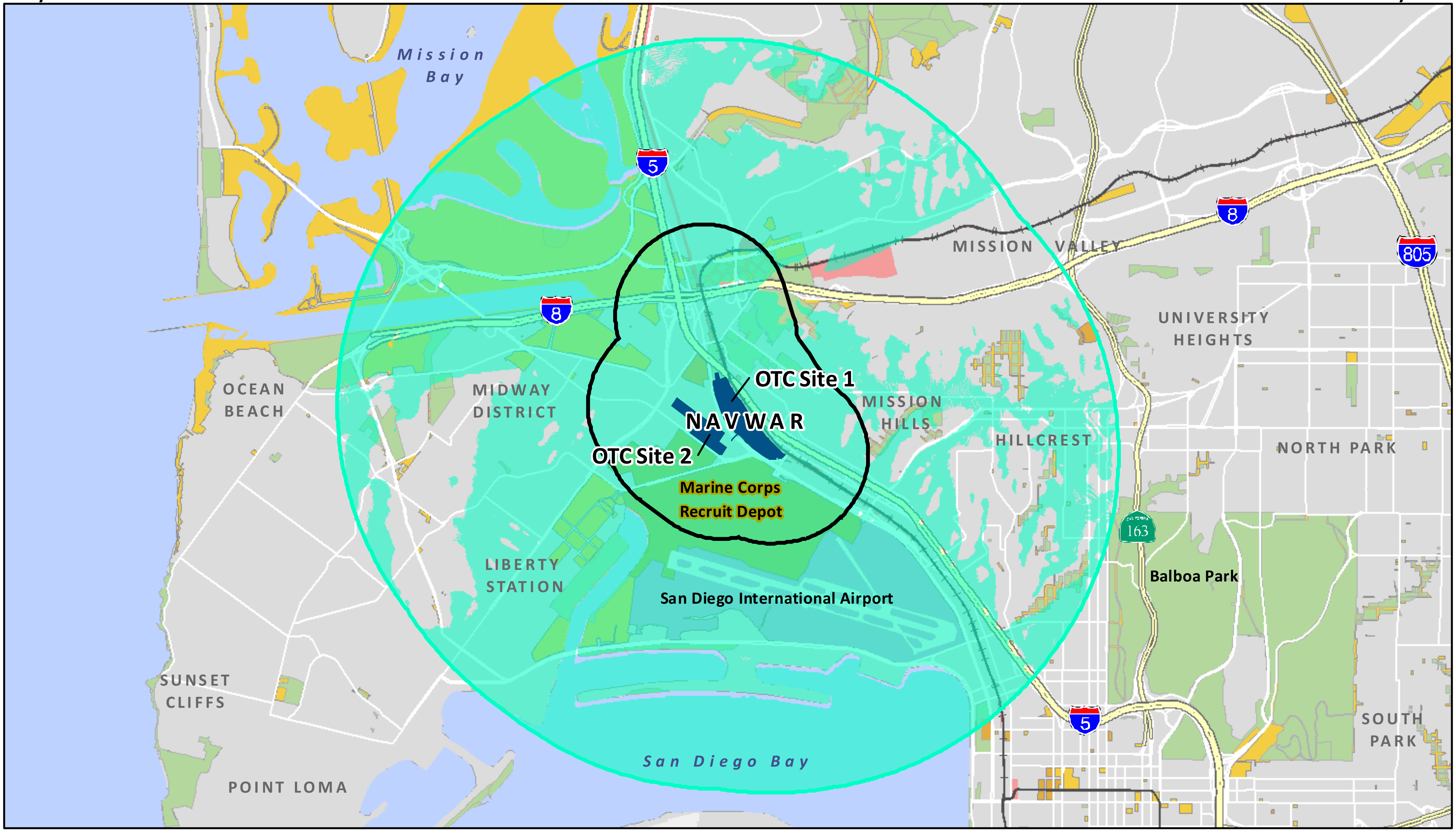
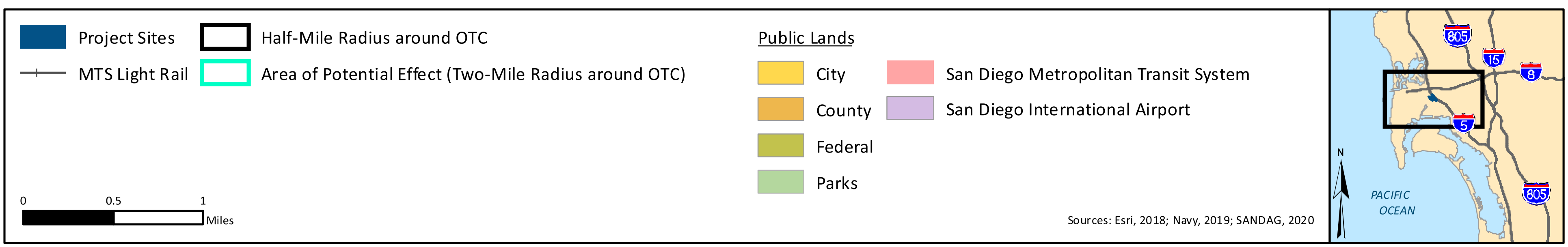


Figure 3.6-1 Cultural Resources Area of Potential Effect



The EO 13007 promotes the protection of and access to Indian Sacred Sites on federal lands. It directs federal land managing agencies, to the extent practicable and consistent with the agency's mission and function, to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners as well as avoidance of adverse effects to such sacred sites.

NHPA is the predominant driver of cultural resource identification and protection. Cultural resources listed in the NRHP or eligible for listing in the NRHP are "historic properties" as defined by the NHPA. The list was established under the NHPA and is administered by the National Park Service on behalf of the Secretary of the Interior. The criteria of eligibility for NRHP listing in 36 CFR section 60.4 states: "the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

A. that are associated with events that have made a significant contribution to the broad pattern of our history; or

B. that are associated with the lives of persons significant in the past; or

C. that embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value or represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important in prehistory or history."

Properties that meet these criteria are afforded protection under the NHPA and are eligible for NRHP inclusion. Section 106 requires federal agencies to take into account the effect of any undertaking upon NRHP-listed, eligible, or potentially eligible properties; share information about proposed undertakings with the potential to affect historic properties; and to afford SHPO, ACHP, federally recognized Indian tribes, and other consulting parties to comment prior to initiating the proposed undertaking. Federal regulation 36 CFR part 800, "Protection of Historic Properties," defines specific procedures for federal agencies to follow in complying with Section 106 of NHPA.

Under 36 CFR section 800.14, federal agencies may develop program alternatives, such as a Programmatic Agreement (Programmatic Agreement), in order to tailor Section 106 compliance measures to the resources, actions, and stakeholders involved. A Programmatic Agreement may be developed to govern the implementation of a particular program or the resolution of adverse effects from complex projects or multiple undertakings by establishing alternative processes for managing historic preservation compliance for routine actions, or when the effects of an undertaking are not fully known in advance. In this case, Section 106 will be addressed consistent with the 2014 Programmatic Agreement Among the Commander Naval Base Point Loma, the ACHP, and the California SHPO Regarding Naval Base Point Loma Undertakings, San Diego County, California (Naval Base Point Loma Programmatic Agreement).

The Naval Base Point Loma Programmatic Agreement is the primary NHPA compliance mechanism for Naval Base Point Loma, which includes OTC. The Programmatic Agreement provides deferred authority to professionally qualified Navy subject matter experts on the majority of project reviews that significantly reduce cost and time associated with standard consultation. The Programmatic Agreement directs that all new construction, alterations, structure modifications, or repairs and maintenance on Class 1 (land) and Class 2 (buildings and structures) properties will be reviewed in accordance with "Policy and Procedures for Conducting Environmental Review Process at Naval Base Point Loma." The

Programmatic Agreement stipulates that ground-disturbing activities include appropriate measures to protect archaeological resources and provide direction for managing inadvertent discoveries, unanticipated effects, and emergencies to avoid or minimize harm to historic properties. The Programmatic Agreement also establishes the procedures for identifying and addressing adverse effects through consultation between the Navy and the SHPO, ACHP, federally recognized Indian tribes, and other consulting parties.

The Navy follows the procedures established under Native American Graves Protection and Repatriation Act (implementing regulations 43 CFR part 10), Chief of Naval Operations Instruction 11170.2B (Navy Responsibilities Regarding Undocumented Human Burials), and the Naval Base Point Loma Programmatic Agreement if human remains are discovered, depending on the origin and age of the remains. Depending on the potential for encountering Native American graves, the Navy would also consult with culturally affiliated tribes to develop a Native American Graves Protection and Repatriation Act Plan of Action or Comprehensive Agreement.

3.6.3 Approach to Analysis

Under NEPA, potential impacts on cultural resources may result from physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the importance of the resource; introducing visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; neglecting the resource to the extent that it deteriorates or is destroyed; or constraining access. The Navy synthesized information from past and current studies to facilitate an analysis of potential impacts on known and potential cultural resources for each Proposed Action Alternatives. Under the Proposed Action Alternatives, impacts on cultural resources may include, but are not limited to, the following:

- physical destruction, damage, or alteration of all or part of an historic property
- introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting
- isolation or neglect of a property resulting in its deterioration or destruction
- limiting access to historic properties and sacred sites

The following general principles were used to evaluate impacts:

- the extent, if any, to which the action would result in substantial physical alteration, damage, or destruction of all or part of a resource
- the extent, if any, that the action would alter characteristics of the surrounding environment that contribute to the importance of the resource through the introduction of visual, atmospheric, or audible elements
- the degree, if any, to which the action would constrain access to culturally important sites

These NEPA impacts are similar to the criteria used to determine adverse effects on historic properties under the NHPA. Per 36 CFR 800.5(a)(2)(i-vii), criteria for adverse effects on historic properties include, but are not limited to:

(i) Physical destruction of or damage to all or part of the property.

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the *Secretary of the Interior Standards for the Treatment of Historic Properties* (36 CFR part 68) and applicable guidelines.

(iii) Removal of the property from its historic location.

(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.

(v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization.

(vii) Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

3.6.4 Public and Tribal Participation

Consistent with NEPA and NHPA, the Navy supports stakeholder participation in cultural resources reviews. During the NEPA public scoping process and review of the Draft EIS, and during coordinated meetings under NHPA, the Navy provides information and solicits input from the public, interested organizations, local governments, and federally recognized Indian tribes on potential effects and measures to minimize or mitigate adverse effects to historic properties.

3.6.5 Affected Environment

The Navy OTC is covered under the Naval Base Point Loma Integrated Cultural Resources Management Plan (Ultrasystems, 2017), which provides additional information on the Navy's cultural resources management responsibilities and practices as well as background information on cultural resources within the San Diego area.

In support of the Proposed Action Alternatives, the Navy conducted inventories of cultural resources at the Navy OTC to identify properties that are listed or potentially eligible for listing in the NRHP, including a record search of the California Historical Resources Information System and a review of recorded resources and prior inventories. An intensive-level historic resources survey was conducted by architectural historians of all buildings and structures in the Proposed Action Alternatives area built prior to 1992 (the end of the Cold War period). Extensive archival research was conducted on WWII and Cold War-era activities at OTC. The records reviews, survey, and archival research were then analyzed to determine NRHP eligibility. The results of these efforts are described below.

Additionally, a reconnaissance-level survey was conducted to document views towards the Proposed Action Alternatives area within the APE and to assess the potential for effects on historic properties located outside the Proposed Action area. The reconnaissance survey included all 110 historic properties within a 0.5-mile radius from the Proposed Action area. Beyond 0.5 mile and up to 2 miles, a sample of the 703 historic properties in that area were surveyed. The sample confirmed that views of the Proposed Action area between 0.5 mile and 2 miles away would be limited to middleground views (see distance zone definitions in Appendix H, Sections 2.0 and 4.3) and would not create a negative contrast to the visual setting of those properties.

3.6.5.1 Background Setting

Prehistoric and Ethnohistoric Setting

The prehistoric and historic cultural setting for the project's region is briefly outlined below. For its wider context, see more detailed discussions of prehistoric archaeology (Gallegos, 2017; Moratto, 1984). For more narrowly focused discussions of the local issues and evidence, see, for example, the historic properties background study for metropolitan San Diego (Carrico, 2008; McDonald and Eighmey, 2008; Schaefer and Van Wormer, 2008; Warren et al., 2008).

The prehistory of San Diego County can be divided into three major chronological periods: Paleoindian/Early Archaic (circa 8,000-4000 Before Christ), a Middle/Late Archaic period (circa 4000 Before Christ-Anno Domini 1300), and a Late Prehistoric period (circa Anno Domini 1300-1769). For the first period, the earliest archaeological evidence in San Diego County is thought to be a distinctive stone tool assemblage and inhumation burials (Gallegos, 2017; Moratto, 1984). Characteristics of archaeological evidence from the second period in the coastal San Diego region are extensive shell middens, greater use of ground stone technology, atlatls or spear throwers, and flexed human burials (Gallegos, 2017; Moratto, 1984). Characteristics of archaeological evidence from the third period in coastal San Diego County has been distinguished primarily on the basis of three major innovations: the use of the bow and arrow, pottery, and the practice of human cremation. Traits characterizing the Late Prehistoric period include a greater amount of interregional exchange, more elaboration of nonutilitarian culture, and possibly denser regional populations (Gallegos, 2017; Moratto, 1984). Economic intensification continued throughout prehistory, culminating in the ethnographic Tipai culture that was first encountered by Spanish explorers in the 1540s (Luomala, 1978). The Tipai, also referred to as Kumeyaay, Diegueño, and Ipai, inhabited littoral, valley, foothill, mountain, and desert areas.

Historic Setting

European exploration of the San Diego area was initiated with the maritime expeditions of Juan Rodriguez Cabrillo in 1542 and Sebastián Vizcaíno in 1602. However, the historic period proper did not begin until 1769, when expeditions under the leadership of Gaspar de Portolá and Junípero Serra reached the region from Baja California and passed northward along the coastal plain en route to Monterey. In that year, a royal presidio and the Missión San Diego de Alcalá were founded, and the incorporation of local Kumeyaay population into the mission system was begun.

In 1821, Mexico achieved its independence from Spain, and the region became more open to outside visitors and influences. The missions were secularized in 1833. Native Americans released from the San Diego mission returned to their native villages, moved east to areas lying beyond Mexican control, or sought work on ranchos or in the town of San Diego. Numerous large land grants were issued to private owners during the Mexican period.

The conquest and annexation of California by the U.S. in the Mexican-American War between 1846 and 1848 ushered in many more changes. Many California families lost their lands to outsiders and cultural patterns that were brought by immigrants from the eastern U.S. gradually supplanted old California customs. The region experienced cycles of economic and demographic booms and busts. Aspects of development included the creation of transportation networks based on port facilities, railroads, highways, and airports; more elaborate systems of water supply and flood control; grazing livestock and growing a changing array of crops; supporting military facilities; limited amounts of manufacturing; and accommodating visitors and retirees. After false starts, San Diego converted itself to a substantial city, and then into a metropolis, with exceptionally wide civic boundaries encompassing such suburbs as

Ocean Beach, Pacific Beach, Clairemont, and La Jolla. Other cities were incorporated in the coastal region, including National City, Coronado, Chula Vista, Imperial Beach, Del Mar, Solana Beach, and Encinitas.

History of the Naval Base Point Loma Old Town Campus

OTC historically was known as Consolidated Aircraft Plant 2 during WWII and Air Force Plant 19 during the Cold War. The manufacturing plant was completed in 1941 as a government-owned, contractor-operated facility. It was the second of two Lindbergh Field plants that the U.S. Army Corps contracted Consolidated Vultee Aircraft Corporation (Consolidated Vultee) to build for the assemblage of B-24 "Liberator" bombers and the PBY[10] Catalina flying boats during WWII. With the outbreak of WWII, the aircraft industry became the largest single industry in America (San Diego Air and Space Museum, 2019). In San Diego, Consolidated Aircraft grew exponentially during the early years of WWII (from 3,170 employees in 1940 to 45,000 in 1943). Despite initial reservations, the labor shortage increasingly made employing women in assembly work more appealing. Both Consolidated and Rohr (another San Diego manufacturer) began hiring women in August and September 1941 (Clark, 1977). Consolidated Aircraft built the most warplanes of all the WWII manufacturers and Consolidated Aircraft San Diego constructed the majority of those planes (Wagner, 1976).

Following WWII, Consolidated Vultee ceased to operate at Plant 2. On May 31, 1946, the property was declared surplus. Charles W. Carlstrom (through the Greater San Diego Development Company) acquired most of the plant in 1947 and leased parts of the buildings. By the fall of 1950, Consolidated Vultee's Guided Missile Division began leasing part of Plant 2 for manufacturing U.S. Navy *Terrier* missile prototypes. Manufacturing expanded to the U.S. Air Force's F-102s and F-106s at Plant 2, prompting the Air Force to reacquire the plant through condemnation proceedings (Los Angeles Times, 1953, p. 42).

Increasingly, manufacturing at Plant 2 not only supported aircraft manufacturing but also astronautical manufacturing. By 1960, Plant 2 became the only plant that manufactured *Atlas* missile tanks, which were first used as Intercontinental Ballistic Missiles and then space launch vehicles that aided in project *Mercury* (1958-1962) and other space programs (*Convairiety,* 1959 and 1960a; General Dynamics, 1962). Liquid hydrogen tanks for the upper stage launch vehicle *Centaur* tanks were also manufactured at Plant 2 on the same assembly line as the *Atlas* (*Convairiety,* 1960b; General Dynamics, 1965). During this time, Plant 2 became known as Air Force Plant 19. The plant continued to support aircraft manufacturing and made important contributions to space programs such as manufacturing the mid-fuselages (structural backbone) of the Space Shuttles *Enterprise* (OV-101), *Challenger* (OV-99), *Columbia* (OV-102), *Discovery* (OV-103), and *Atlantis* (OV-104) (NASA, 2020; Convair, 1981). Air Force Plant 19 was the primary contractor for manufacturing the Tomahawk Ground Launch Cruise Missile Transporter Erector-Launcher and Launch-Control-Center (General Dynamics, 1980, 1981, and 1983). Manufacturing and use of the Ground Launch Cruise Missile units ceased in response to the Intermediate-Range Nuclear Forces Treaty signed between the U.S. and the Soviet Union on December 7, 1987. In July 1988, 50 inspectors from the Soviet Union inspected four former Ground Launch Cruise Missile production facilities, including Air Force Plant 19 (GlobalSecurity.org, 2020). In early 1988, the Air Force declared the site as "excess of Air Force ownership" and sought to sell the site to General Dynamics or another entity (Times-Advocate, 1988:A7). The U.S. Air Force transferred Plant 19 to the U.S. Navy in 1994. OTC Site 1

[10] The designation "PBY" was determined in accordance with the U.S. Navy aircraft designation system of 1922; *PB* representing "Patrol Bomber" and *Y* being the code assigned to Consolidated Aircraft as its manufacturer.

continues to serve the Navy, Marine Corps, and other DoD and national sponsors as a full-spectrum research, development, testing, and education laboratory.

3.6.5.2 Archaeological Resources

A record search of the California Historical Resources Information System was conducted through the South Coastal Information Center in June 2020. California Historical Resources Information System records identified 848 previous reports within a 2-mile radius of the Proposed Action area. These reports include all prior surveys and/or reports submitted to the South Coastal Information Center that address cultural resources including, but not limited to, cultural resource technical reports, archaeological survey and monitoring reports, and architectural evaluation reports. Of those reports, only 14 intersect or overlap the Proposed Action area.

California Historical Resources Information System records also indicate the presence of 78 previously recorded archaeological sites within a 2-mile radius of the Proposed Action area; eight archaeological sites are located within the ½-mile radius. No archaeological sites were identified within the Proposed Action area. Most of the recorded archaeological resources within the ½-mile radius contain trash scatters and are associated with single-family properties (see Appendix H, Attachments A-C for more information). The Proposed Action Alternatives would have no impact on archaeological resources outside the Proposed Action area, so these resources are not discussed further.

The most complete archaeological examination of the Proposed Action area was completed in 1994 by Roger Mason and Joel Paulson (1994). Mason and Paulson's project area included OTC Site 1 and OTC Site 2. Although Mason and Paulson did not conduct an archaeological survey due to the presence of structures and hardscaping, they used geological data from a previous study to assess archaeological potential. According to Mason and Paulson, the 1992 geological study by V. D. Berger "showed that the study area is underlain by man-made fill to a depth of 8 to 13.5 feet, which overlies bay deposits." Per Mason and Paulson, there is no potential for subsurface prehistoric cultural deposits in the fill and a very low potential in the bay deposits. Furthermore, they conclude that this information indicates that OTC 1 was part of San Diego Bay and was probably a marsh or tidal flat during prehistoric times (see Appendix H for more details).

The geological section of this EIS also supports this finding of low potential for buried archaeological resources based on an investigation near the main gate of OTC Site 1. This investigation found that the uppermost geological unit at OTC is artificial fill from the late Holocene epoch to a depth of approximately 12 feet below ground surface. However, the geological section concludes that the thickness of artificial fill likely varies across OTC Site 1 and OTC Site 2 with a maximum total thickness of fill up to 20 feet (Section 3.14, *Geological Resources*). The artificial fill overlies older Holocene-age bay, estuarine, and river sediments (Kennedy and Tan, 2008). Based on the available geological data for the area, there is low potential for buried unrecorded archaeological resources in OTC Site 1 and OTC Site 2.

3.6.5.3 Architectural Resources

An intensive-level architectural survey and evaluation was conducted for the Proposed Action area to determine the presence of historic properties within OTC Site 1 and OTC Site 2. This included an evaluation of OTC Site 1 Buildings 1, 2, 3, 4, 7, 8, 27, 28, 30, 32, 37, 63, 73, and the pedestrian bridge (Facility 69); Taylor Street Complex Buildings 1, 2, 3, and 4; and OTC Site 2 Navy Salvage Yard Building 34

(Appendix I). The buildings and structures broadly include several property types: large assembly plants, warehouses, offices, sheds, a bridge, and a water reservoir.

As a result of the intensive-level survey and archival research (see Appendix I), the Navy determined there is an NRHP-eligible historic district within the Proposed Action area (Figure 3.6-2). The Consolidated Aircraft Plant 2 Historic District is eligible for listing in the NRHP under Criteria A, B, and C for its association with WWII and the Cold War within a local level of significance (see Section 3.6.2 for a description of the NRHP criteria). Significant WWII and Cold War planes, orbiters, and missiles were designed and manufactured at the plant. During WWII, those planes were built in large part by women, known as "Rosie the Riveters." The plant was established by Reuben H. Fleet, member of the International Air and Space Hall of Fame and National Aviation Hall of Fame. The plant is architecturally significant as an example of the massive manufacturing complexes built for aircraft production. The seven contributing resources to the historic district are OTC Site 1 Buildings 1, 2, 3, 7, 8, 30, and the pedestrian bridge (Facility 69) (Table 3.6-1). These contributing resources were all interrelated components of the manufacturing/assembly plant during WWII and the Cold War and retain integrity to both periods of significance (see Appendix I).

Table 3.6-1 Consolidated Aircraft Plant 2 Historic District

Building No.	*Building Name*	*Current Function*	*Year Built*	*Contributor*
OTC 1	South Administration/ Warehouse Facility	Operational storage, administrative office, research lab	1941	Yes
OTC 2	Administration/Research Lab Facility	Research lab, Research Development Test and Evaluation lab, administrative office	1941	Yes
OTC 3	Former Lockheed Martin Facility	General purpose warehouse, operational storage, exchange retail store, research lab, general purpose auditorium	1941	Yes
OTC 7	Staging Warehouse/ Camouflage Building / Paint Shop	Paint and blasting shop, general purpose warehouse, administrative office	1941	Yes
OTC 8	Warehouse / Drop Hammer Building	Storage	1941	Yes
OTC 30	Storage Facility	Storage facility, administrative	1941	Yes
OTC 69	Pedestrian Bridge	Pacific Highway pedestrian bridge	1942	Yes

Legend: OTC=Old Town Campus.

Under Criterion A, the Consolidated Aircraft Plant 2 Historic District is eligible for listing in the NRHP under the theme of WWII and subthemes of Aircraft Manufacturing and Homefront/Labor. The period of significance is 1941-1945, starting with the completion of the plant in October of 1941, and ending in 1945 when production of WWII-era aircraft ended at Plant 2. B-24 heavy bombers and PBY *Catalinas* played essential roles during WWII and were essential weapons in the success of the Allies in both the Pacific and European war theaters. They were designed in San Diego at Consolidated Aircraft and constructed here and at other plants in the U.S. Women comprised a significant portion of the workforce at the plant (40 percent at the peak in 1943), part of the nation-wide utilization of women on the homefront during WWII.

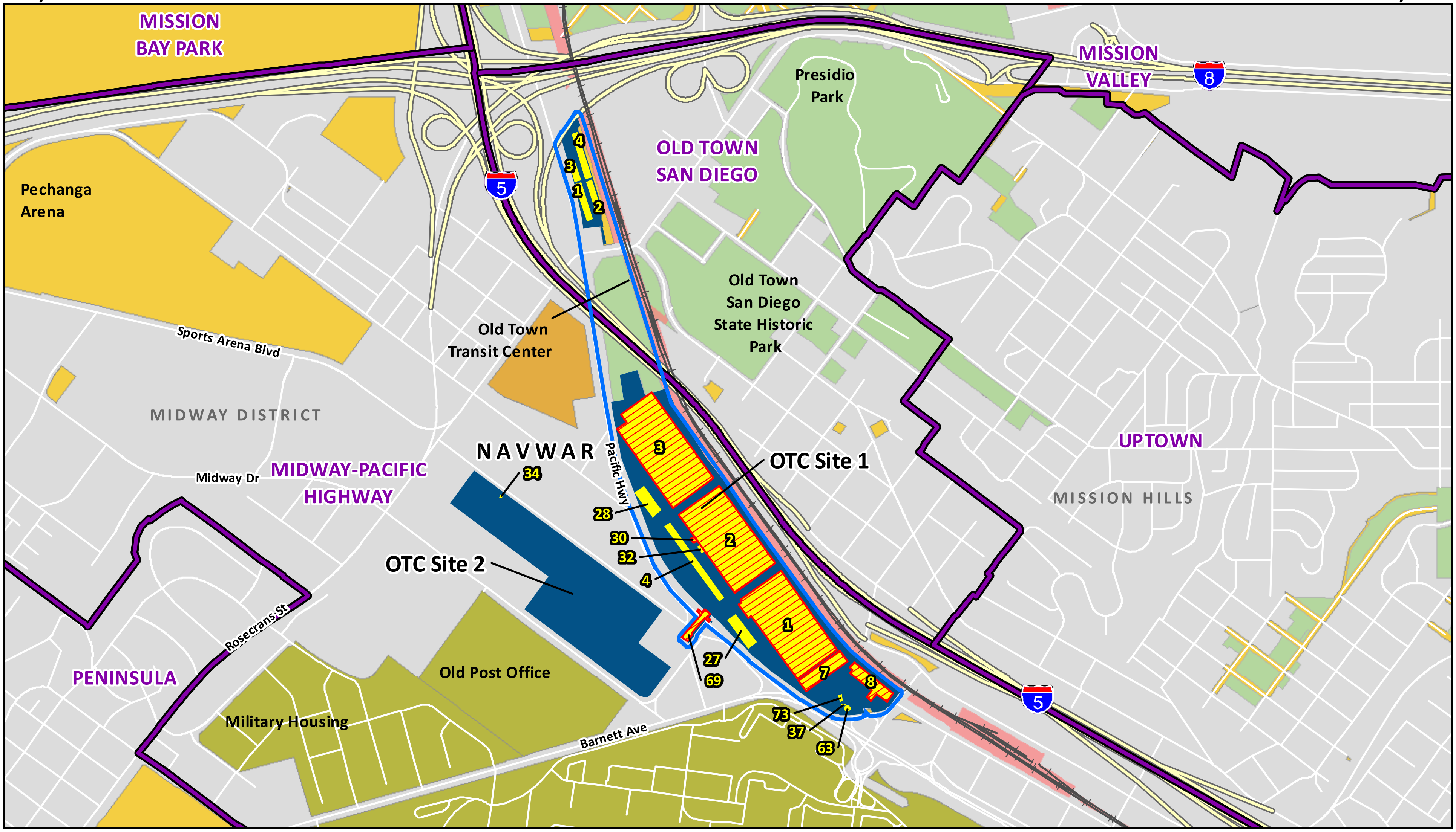
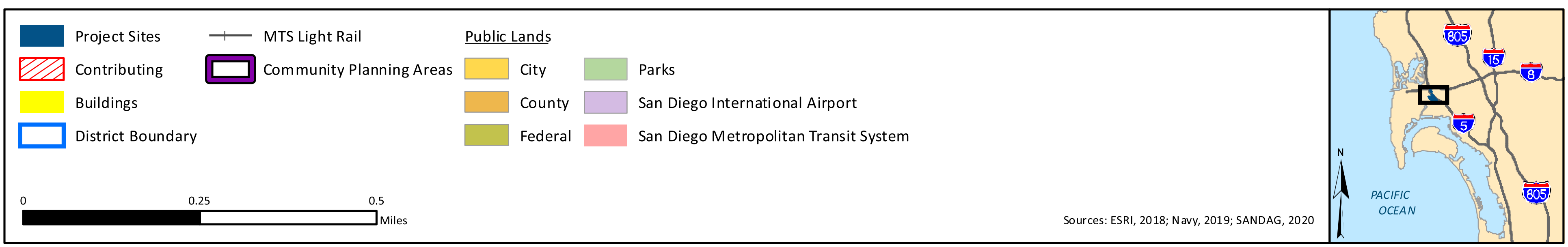


Figure 3.6-2 Cultural Resources Consolidated Aircraft Plant 2 Historic District



The Consolidated Aircraft Plant 2 Historic District is also eligible for listing in the NRHP under Criterion A under the theme of the Cold War and subtheme of Manufacturing. During the plant's association with the Cold War, numerous significant aircraft, orbiters, and missiles were manufactured and/or assembled here including: *Terrier* Surface-to-Air Missile, F-102 and F-106 interceptor aircraft; *Atlas* and *Centaur* tanks; mid-fuselages of orbiters *Enterprise*, *Columbia*, *Challenger, Discovery*, and *Atlantis*; and Ground Launch Cruise Missile, Transporter Erector-Launcher, and Launch-Control-Center. The period of significance is 1950-1988, beginning with the first significant Cold War-era manufacturing (prototype of the *Terrier* Surface-to-Air Missile) and ending in 1988 when Cold War-era production ceased at the facility and the Air Force deemed it to be excess property.

Under Criterion B, the Consolidated Aircraft Plant 2 Historic District is eligible for listing in the NRHP under the theme of WWII and subtheme of Aircraft Manufacturing for its association with Ruben H. Fleet. Fleet founded Consolidated Aircraft which was the leading U.S. manufacturer of military training planes, expanded aircraft manufacturing in San Diego, and made significant contributions to the innovations and growth of aerospace technology in the U.S. His importance to the field of aviation is recognized by his acceptance to the International Air and Space Hall of Fame and National Aviation Hall of Fame. The Consolidated Aircraft Plant 2 Historic District is the only remaining property associated with Fleet's productive career in San Diego. The period of significance is 1941-1945, starting with his association with the property during the last years of his productive career and ending in 1945 when his association with the property ended.

The Consolidated Aircraft Plant 2 Historic District is also eligible for listing in the NRHP under Criterion C for the theme of Architecture, with a subtheme of Aircraft Manufacturing and Assembly Plants. The period of significance under Criterion C is 1941, the year of construction for the plant. The large-scale design of OTC Site 1 Buildings 1, 2, 3, 7, and 8 represents a property type developed during the Industrial Revolution, which suited the massive industrial construction program that the nation's private manufacturers used to produce military aircraft essential to the war effort during WWII. The plant buildings were among the last manufacturing buildings built in the U.S. or Europe that represented the value of plentiful natural light and air in an industrial setting. The Consolidated Aircraft Plant in San Diego represents an important remaining industrial plant designed by Taylor and Taylor as other plants designed by the firm have been demolished including the previously adjacent Consolidated Plant 1 and the even larger, more ambitious project at Douglas Aircraft in Long Beach.

In addition to the Consolidated Aircraft Plant 2 Historic District, the Navy identified 703 architectural properties within the APE considered for the purpose of this analysis to be NRHP-eligible (Figure 3.6-3) (see Appendix H, Table 3.6-2). Those properties include five National Historic Landmarks: 4000 Mason (Casa de Estudillo), San Diego Presidio, Balboa Park, *Berkeley* Ferry, and *Star of India.* Casa de Estudillo and San Diego Presidio (within Presidio Park) are located within 0.5 mile of the Proposed Action area, while the other three are located at the 2-mile mark. In addition to the National Historic Landmarks, the list also includes 17 historic districts identified by the City of San Diego through designation or surveys for Midtown Pacific Highway, Old Town, or Uptown community plan areas. In particular, the MCRD Historic District is noteworthy due to its proximity to the Proposed Action area. Twelve individually eligible properties are also contributing resources to the Old Town San Diego State Historic Park (Old Town State Park), a NRHP-listed historic district.

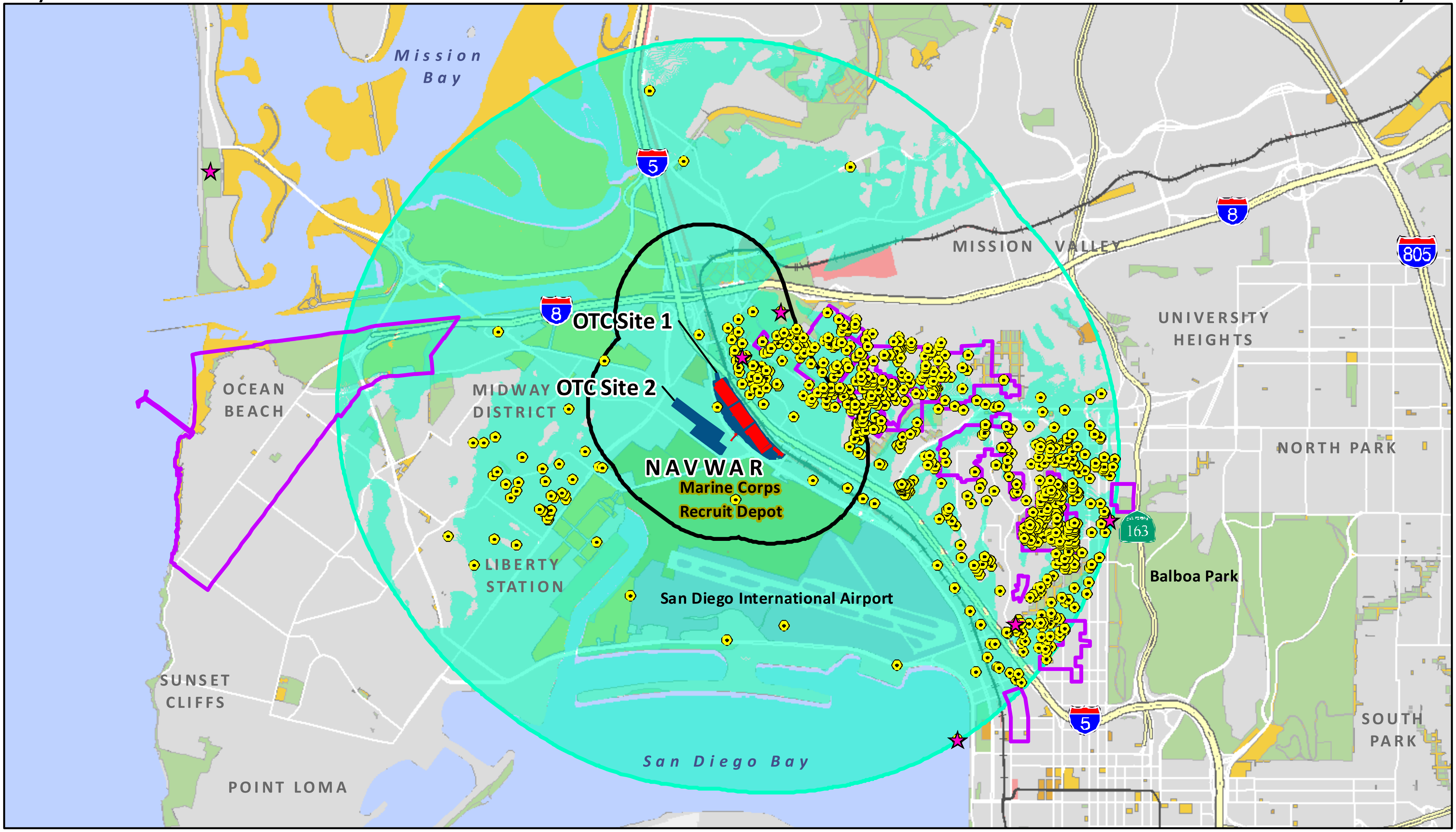
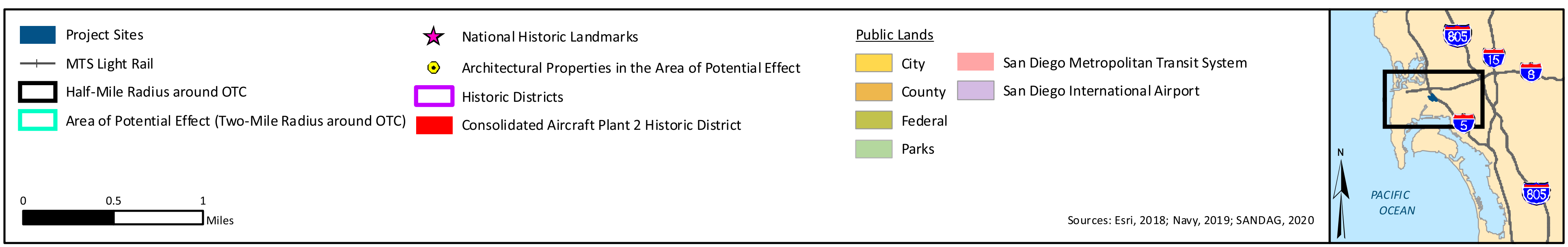


Figure 3.6-3 Architectural Properties within the Area of Potential Effect



3.6.5.4 Traditional Cultural Properties

The Navy consulted with the Kumeyaay during development of the Naval Base Point Loma Programmatic Agreement (signed in 2014), and no known TCPs or sacred sites were identified in the Proposed Action area (Ultrasystems, 2017). As part of the Section 106 consultation for this project, a request was sent to the California Native American Heritage Commission March 10, 2020, to search their Sacred Lands File to determine whether their files contain any information relating to the presence of Native American cultural resources within the Proposed Action area. The Native American Heritage Commission responded on March 18, 2020, stating that the record search indicated the presence of Native American cultural resources in or within the vicinity of the Proposed Action area (see Appendix H, Attachment C). As part of the Section 106 consultation process, the Navy will consult with federally recognized Indian tribes to identify historic properties of traditional religious and cultural importance to them that may be affected by the Proposed Action.

3.6.6 Environmental Consequences

This section evaluates how the Proposed Action Alternatives could impact cultural resources within the APE using the general principles identified in Section 3.6.3. Analysis addresses potential impacts on all cultural resources that may result from implementation of the No Action Alternative and five action alternatives.

For all the alternatives, the following analysis assumes the Navy will retain ownership of OTC Site 1 and OTC Site 2. If there is a future decision to transfer the property out of federal ownership, further analysis would be needed to determine if such an action would result in a significant impact to cultural resources. It is also possible that new utilities may extend outside the Proposed Action area within adjacent easements, but the location and extent of associated ground disturbance is not known at this time. Therefore, the analysis assumes that once future utility plans are identified for areas outside OTC, further analysis would be needed to determine if the utility plans could result in a significant impact to cultural resources.

3.6.6.1 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur and there would be no change to cultural resources within the APE. Therefore, no impacts to cultural resources would occur with implementation of the No Action Alternative.

3.6.6.2 Alternative 1: NAVWAR-Only Redevelopment

Alternative 1 consists of revitalization of OTC Site 1 to meet NAVWAR’s facility requirements with Navy-funded capital improvements only. This would potentially include consolidating NAVWAR operations into two of the existing buildings on OTC Site 1. The existing buildings at OTC Site 2 would not be modified under this alternative, and there would be no ground disturbance in OTC Site 2; therefore, OTC Site 2 is not discussed further under this alternative.

Within the Proposed Action Area

Under Alternative 1, proposed construction activities would result in ground disturbance at OTC Site 1. There are no identified archaeological resources within OTC Site 1. Additionally, based on available geological data for the area, there is low potential for buried unrecorded archaeological resources at OTC Site 1. To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO and federally recognized Indian tribes. If archaeological sites or unanticipated effects to historic properties are discovered during construction, the Navy would follow regulations for post-review discoveries, per 36 CFR 800.13. As such, the Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until the Navy concludes consultation with SHPO and federally recognized Indian tribes regarding the discovery. Although there are no known TCPs or sacred sites identified within the Proposed Action area, the Navy will continue engaging with consulting tribes throughout the Section 106 process to address potential effects to any additional historic properties of traditional religious and cultural importance to them.

Portions of La Playa Trail (P-37-028552) are located within the Proposed Action area. La Playa Trail consists of several historic public streets (Midway Drive between Rosecrans Street and Barnett Avenue; Enterprise Street between Midway Drive and Sports Arena Boulevard; and Rosecrans Street between Nimitz Boulevard and Pacific Highway). Alternative 1 would not change any of the associated historic public streets and, therefore, would not impact La Playa Trail.

Construction and demolition associated with Alternative 1 would result in physical damage to the Consolidated Aircraft Plant 2 Historic District. Under Alternative 1, the only contributing resources of the Consolidated Aircraft Plant 2 Historic District that would be retained would be OTC Site 1 Buildings 2 and 3, and the pedestrian bridge (Facility 69). The other contributing resources would be demolished. Alterations to Buildings 2 and 3 would include removal of all exterior finishes down to the steel structural system, new insulated metal siding, roofing, and glazing systems. The size and volume of the interior spaces would be altered with construction of new/additional office spaces to create a substantial increase in usable square footage. As proposed, the rehabilitation of Buildings 2 and 3 does not comply with the Secretary of the Interior Standards for the Treatment of Historic Properties (see https://www.nps.gov/tps/standards.htm) (National Park Service 2021). Therefore, construction and demolition associated with Alternative 1 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility.

After construction, the Navy would continue to operate OTC Site 1 as a NAVWAR facility. Proposed operations at OTC Site 1 would have no impact on historic properties, especially after the proposed renovation or demolition of the contributing resources of the Consolidated Aircraft Plant 2 Historic District renders the district ineligible. Operations would not involve ground disturbance, and therefore would have no impact on archaeological resources.

Outside the Proposed Action Area

Construction and demolition activities associated with Alternative 1 would not result in physical damage to nearby cultural resources within the APE nor introduce visual, auditory, or atmospheric elements out of character with the historic properties nor alter their settings (see Appendix H for more information). As such, no cultural resources outside the Proposed Action area would be impacted under Alternative 1.

Conclusion

Implementation of Alternative 1 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Consistent with the requirements under Section 106 of NHPA, by following the process outlined in the Naval Base Point Loma Programmatic Agreement, the Navy will develop measures to minimize or mitigate adverse effects on historic properties. With implementation of these measures, impacts under Alternative 1 could be reduced to less than significant under NEPA.

3.6.6.3 Alternative 2: Higher Density Mixed-use Revitalization Potential Impacts

Alternative 2 consists of demolition of all buildings and structures within the Proposed Action area, construction of new Navy facilities, and high-density mixed-use development.

Within the Proposed Action Area

Under Alternative 2, proposed construction activities would result in ground disturbance at OTC Site 1 and OTC Site 2. There are no identified archaeological resources within these areas. Additionally, based on available geological data for these areas, there is low potential for buried unrecorded archaeological resources within the Proposed Action area. To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties. If archaeological sites or unanticipated effects to historic properties were discovered during construction, the Navy would follow regulations for post-review discoveries, per 36 CFR 800.13. As such, Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until Navy concludes consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties regarding the discovery. Although there are no known TCPs or sacred sites identified within the Proposed Action area, the Navy will continue engaging with consulting tribes throughout the Section 106 process to address potential effects to any additional historic properties of traditional religious and cultural importance to them.

Portions of La Playa Trail (P-37-028552) are located within the Proposed Action area. Alternative 2 would not change any of the associated historic public streets and, therefore, would not impact La Playa Trail.

Construction and demolition associated with Alternative 2 would result in physical damage to the Consolidated Aircraft Plant 2 Historic District. Construction of Alternative 2 would result in the demolition of all contributing resources of the Consolidated Aircraft Plant 2 Historic District. Therefore, construction and demolition associated with Alternative 2 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility.

After construction, the Proposed Action area would contain a NAVWAR facility along with a combination of mixed use residential, office, hotel, and retail space. Proposed operations would have no impact on cultural resources, especially after the proposed demolition of the contributing resources of the Consolidated Aircraft Plant 2 Historic District renders the district ineligible. Operations would not involve ground disturbance, and therefore would have no impact on archaeological resources.

Outside the Proposed Action Area

Proposed construction under Alternative 2 includes 59 mid-rise (9 to 21 floors) buildings that would introduce visual elements that are out of character for 19 historic properties (architectural) located within 0.5 mile of the Proposed Action area, and this change would alter their setting (Table 3.6-2 and Figure 3.6-4) (see Appendix H for detailed analysis). Two of those properties, Casa de Estudillo and San Diego Presidio, are also designated National Historic Landmarks.

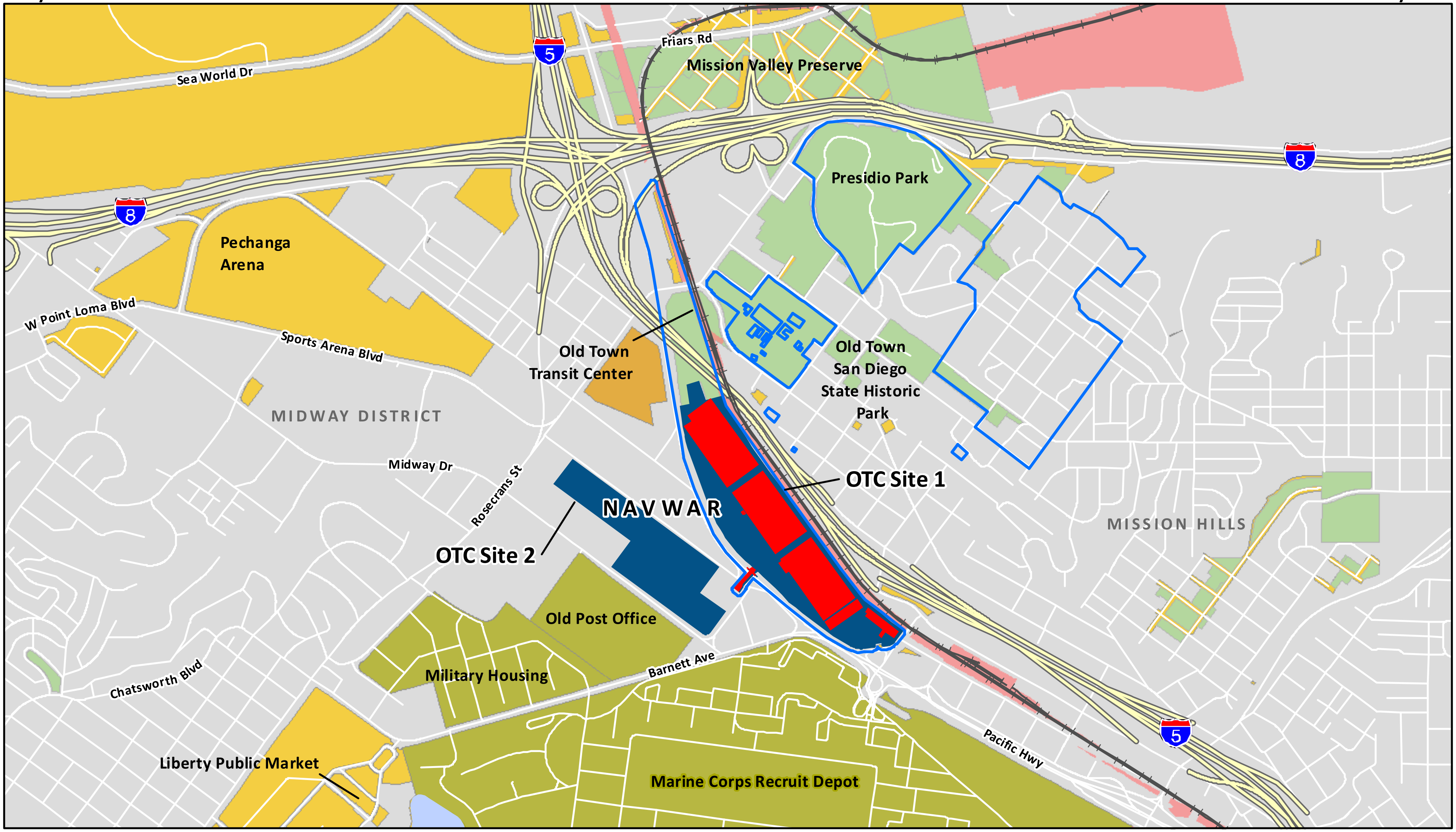


Figure 3.6-4 Historic Properties with Adverse Effects

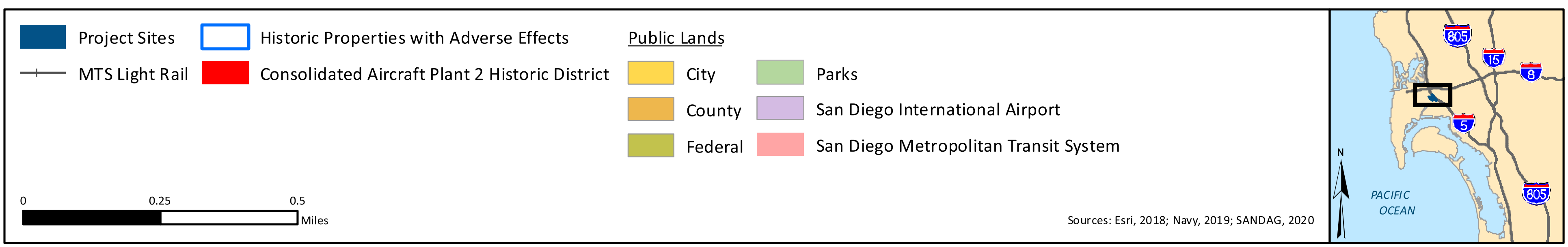


Table 3.6-2 Historic Properties (Architectural) within the APE with Altered Setting

Address	*Historic Name*	*Year*	*SHPO Status Code**
Marine Corps Recruit Depot	Marine Corps Recruit Depot		1D
4016 Wallace Street (Old Town State Park)	Old Town San Diego State Historic Park	1821	1
2612 San Diego Avenue (Old Town State Park)	San Diego Union Office	1850	1D
2616 San Diego Avenue (Old Town State Park)	Pedporena Adobe	1869	1CS; 5D1
2724 Congress Street (Old Town State Park)	Casa de Machadnueo-Stewart	1830	1CS; 5D1
2731 San Diego Avenue (Old Town State Park)	San Diego Courthouse	1847	1D
2733 San Diego Avenue (Old Town State Park)	Colorado House	1851	1D
2737 San Diego Avenue (Old Town State Park)	Casa de Rodriguez	1830s	2D
2740 San Diego Avenue. (Old Town State Park)	Plaza; San Diego Viejo; Washington Square	-	1D
2741 San Diego Avenue (Old Town State Park)	Casa de Machado	1835	1CS; 5D1
3966 Mason Street (Old Town State Park)	Mason Street School	1865	1CS; 5D1
4000 Mason Street (Old Town State Park)	Casa de Estudillo (NHL)	1828	1CS; 5D1
4000 Wallace Street (Old Town State Park)	Rose-Robinson Adobe Reconstruction	-	2D2
2293 San Juan Road	William Mason Fortesque Residence	1955	5S2
2660 Calhoun Street (Old Town State Park)	Casa de Bandini	1829	1CS; 5D1
2727 Presidio Drive	San Diego Presidio (NHL)	1769	1S
3890 Twiggs Street	Casa Larga	1835	1CS; 5S1
2495 Jefferson Street (Survey)	2495 Jefferson Street	c.1927	5S3
Northwest Mission Hills Historic District (Survey)	Northwest Mission Hills Historic District	1908-1950	5D3

Legend: NHL=National Historic Landmark; SHPO = State Historic Preservation Office; Survey = Community Plan Area survey for either Old Town or Uptown.

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

Thirteen of the 19 properties are in Old Town State Historic Park, including the Casa de Estudillo. Views from Old Town State Historic Park toward the Proposed Action area, including the central plaza, are among the most impacted. Outside of the Old Town State Historic Park, the new construction would be clearly visible from San Diego Presidio, Casa Larga, William Mason Fortesque Residence, 2495 Jefferson Street, MCRD, and Northwest Mission Hills Historic District. In particular, the impacted view is a character-defining feature of the Fortesque Residence, Northwest Mission Hills Historic District, and the San Diego Presidio because views directly relate to the historical significance of the properties.

Overall, the mass, scale, and height, as well as the contrast of the new construction, would be an incompatible change to the setting and views of these 19 resources. Therefore, implementation of Alternative 2 would result in extensive alterations to the setting of 19 historic properties, two of which are also National Historic Landmarks.

Conclusion

Implementation of Alternative 2 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Implementation of Alternative 2 would also introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of the Proposed Action area and extensively alter their setting. Consistent with the requirements under Section 106 of NHPA, by following the process outlined in the Naval Base Point Loma Programmatic Agreement, the Navy will develop measures to minimize or mitigate adverse effects on historic properties. With implementation of these measures, impacts under Alternative 2 could be reduced to less than significant under NEPA.

3.6.6.4 Alternative 3: Lower Density Mixed-use Revitalization Potential Impacts

Alternative 3 consists of demolition of all buildings and structures within the Proposed Action area, construction of new Navy facilities, and high-density mixed-use development. Proposed construction activities would result in ground disturbance at OTC Site 1 and OTC Site 2. There are no identified archaeological resources within these areas. Additionally, based on available geological data for these areas, there is low potential for buried unrecorded archaeological resources within the Proposed Action area. To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties. If archaeological sites or unanticipated effects to historic properties were discovered during construction, the Navy would follow regulations for post-review discoveries, per 36 CFR 800.13. As such, Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until Navy concludes consultation with SHPO a, ACHP, federally recognized Indian tribes, and other consulting parties regarding the discovery. Although there are no known TCPs or sacred sites identified within the Proposed Action area, the Navy will continue engaging with consulting tribes throughout the Section 106 process to address potential effects to any additional historic properties of traditional religious and cultural importance to them.

Proposed construction under Alternative 3 includes 48 mid-rise (9 to 21 floors) buildings. Although the number of mid-rise buildings is less than Alternative 2, the resulting impacts are similar. Implementation of Alternative 3 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Implementation of Alternative 3 would also introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of the Proposed Action area and extensively alter their setting.

Consistent with the requirements under Section 106 of NHPA, by following the process outlined in the Naval Base Point Loma Programmatic Agreement, the Navy will develop measures to minimize or mitigate adverse effects on historic properties. With implementation of these measures, impacts under Alternative 3 could be reduced to less than significant under NEPA.

3.6.6.5 Alternative 4: Higher Density Mixed-use Revitalization including a Transit Center Potential Impacts

Alternative 4 consists of demolition of all buildings and structures within the Proposed Action area, construction of new Navy facilities, high-density mixed-use development, and a transit center. Proposed construction activities would result in ground disturbance at OTC Site 1 and OTC Site 2. There are no identified archaeological resources within these areas. Additionally, based on available geological data for these areas, there is low potential for buried unrecorded archaeological resources within the Proposed Action area. To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties. If archaeological sites or unanticipated effects to historic properties were discovered during construction, the Navy would follow regulations for post-review discoveries, per 36 CFR 800.13. As such, Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until Navy concludes consultation with SHPO,ACHP, federally recognized Indian tribes, and other consulting parties regarding the discovery. Although there are no known TCPs or sacred sites identified within the Proposed Action area, the Navy will continue engaging with consulting tribes throughout the Section 106 process to address potential effects to any additional historic properties of traditional religious and cultural importance to them.

Proposed construction under Alternative 4 includes 51 mid-rise (9 to 21 floors) and 35 high-rise (22+ floors) buildings. Implementation of Alternative 4 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Implementation of Alternative 4 would also introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of the Proposed Action area and extensively alter their setting. Consistent with the requirements under Section 106 of NHPA, by following the process outlined in the Naval Base Point Loma Programmatic Agreement, the Navy will develop measures to minimize or mitigate adverse effects on historic properties. With implementation of these measures, impacts under Alternative 4 could be reduced to less than significant under NEPA.

3.6.6.6 Alternative 5: Lower Density Mixed-use Revitalization including a Transit Center Potential Impacts

Alternative 5 consists of demolition of all buildings and structures within the Proposed Action area, construction of new Navy facilities, and high-density mixed-use development, and a transit center. Proposed construction activities would result in ground disturbance at OTC Site 1 and OTC Site 2. There are no identified archaeological resources within these areas. Additionally, based on available geological data for these areas, there is low potential for buried unrecorded archaeological resources within the Proposed Action area. To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties. If archaeological sites or unanticipated effects to historic properties were discovered during construction, the Navy would follow S regulations for post-review discoveries, per 36 CFR 800.13. As such, Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until Navy concludes consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties regarding the discovery. Although there are no known TCPs or sacred sites identified within the Proposed Action area, the Navy will continue engaging with consulting tribes throughout the Section 106 process to address potential effects to any additional historic properties of traditional religious and cultural importance to them.

Proposed construction under Alternative 5 includes 69 mid-rise (9 to 21 floors) and 21 high-rise (22+ floors) buildings. Although the mix of mid-rise and high-rise buildings differs from Alternative 4, the resulting impacts are similar. Implementation of Alternative 5 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Implementation of Alternative 5 would also introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of the Proposed Action area and extensively alter their setting. Consistent with the requirements under Section 106 of NHPA, by following the process outlined in the Naval Base Point Loma Programmatic Agreement, the Navy will develop measures to minimize or mitigate adverse effects on historic properties. With implementation of these measures, impacts under Alternative 5 could be reduced to less than significant under NEPA.

3.6.6.7 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No management practices are proposed for cultural resources based on the analysis presented in Section 3.6.6.

Potential Monitoring Measures

- CUL MON-1. To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties. If an archaeological site were discovered during construction, the Navy would follow regulations for post-review discoveries, per 36 CFR 800.13. As such, the Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until the Navy concludes consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties regarding the discovery.

Potential Mitigation

- CUL MIT-1. The Navy is in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties and will identify and develop appropriate mitigation measures to minimize or mitigate adverse effects on historic properties prior to the Final EIS.

3.6.6.8 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, there would be no impacts to cultural resources from implementation of the No Action Alternative. All action alternatives would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Additionally, Alternatives 2 through 5 would introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of the Proposed Action area and extensively alter their setting. Consistent with the requirements under Section 106 of NHPA, by following the process outlined in the Naval Base Point Loma Programmatic Agreement, the Navy will develop measures to minimize or mitigate adverse effects on historic properties. With implementation of these measures, impacts under Alternatives 2 through 5 could be reduced to less than significant under NEPA. Table 3.6-3 summarizes the effects of the No Action Alternative and the five action alternatives.

Table 3.6-3 Summary of Impacts

Alternative	*Impacts*	*Mitigation Measures / Impact Minimization Measures*
No Action Alternative	None	None
Alternative 1	Less than Significant with mitigation	Developed consistent with Naval Base Point Loma Programmatic Agreement (or NHPA) in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties
Alternative 2	Less than Significant with mitigation	Developed in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties
Alternative 3	Less than Significant with mitigation	Developed in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties
Alternative 4	Less than Significant with mitigation	Developed in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties
Alternative 5	Less than Significant with mitigation	Developed in consultation with SHPO, ACHP, federally recognized Indian tribes, and other consulting parties

Legend: SHPO = State Historic Preservation Office.

3.7 Hazardous Materials and Wastes

This section discusses hazardous materials, hazardous waste, special hazards, and contaminated sites. Solid wastes are addressed in Section 3.11, *Infrastructure*. The ROI for hazardous materials and wastes consists of OTC Site 1 and OTC Site 2, as well as disposal and/or recycling facilities that receive construction, demolition, and operational wastes from the project alternatives.

Hazardous materials are defined by 49 CFR section 171.8 as “hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR part 173.” Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations.

Hazardous wastes are defined by the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments, as: “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (a) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.” Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR part 273. Four types of waste are currently covered under the universal wastes regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps, such as fluorescent light bulbs.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material, polychlorinated biphenyls (PCBs), and lead-based paint.

The DoD established the Defense Environmental Restoration Program to facilitate thorough investigation and cleanup of contaminated sites on military installations (active installations, installations subject to Base Realignment and Closure, and formerly used defense sites). The Installation Restoration (IR) Program and the Military Munitions Response Program are components of the Defense Environmental Restoration Program. The IR Program requires each DoD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The Military Munitions Response Program addresses nonoperational rangelands that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituent contamination. The Environmental Restoration Program is the Navy's initiative to address Defense Environmental Restoration Program.

3.7.1 Regulatory Setting

The following federal and State of California codes and statutes are applicable to hazardous materials and wastes at OTC:

- Federal
  - Clean Air Act (42 U.S.C. section 7401 et seq.)
  - Comprehensive Environmental Response, Compensation, and Liability Act and Superfund Amendments and Reauthorization Act (42 U.S.C. section 6901 et seq.)

    DoD – The DoD established the Environmental Restoration Program to facilitate thorough investigation and cleanup of contaminated sites on military installations.
    Navy – The Navy has implemented the Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous waste.
  - Emergency Planning and Community Right-to-Know Act (42 U.S.C. sections 11001–11050)
  - Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. section 136 et seq.)
  - Resource Conservation and Recovery Act (42 U.S.C. section 6901 et seq.)
  - Toxic Substances Control Act (15 U.S.C. sections 2601–2629)
- State of California
  - Porter-Cologne Water Quality Control Act (California Water Code sections 13000-14076/23 California Code Regulations)
  - California Accidental Release Prevention Law (California Health and Safety Code section 25531, et seq./19 California Code Regulations)
  - California Occupational Safety and Health Act (California Labor Code section 6300-6718/8 California Code Regulations)
  - Hazardous Materials Handling and Emergency Response "Waters Bill" (California Health and Safety Code section 25500, et seq./19 California Code of Regulations)
  - Hazardous Waste Control Law (California Health and Safety Code section 25100, et seq./22 California Code Regulations)

- Carpenter-Presley-Tanner Hazardous Substance Account Act "State Superfund" (California Health and Safety Code section 25300, et seq./California Revenue and Tax Code section 43001, et seq.)
- Hazardous Substances Act (California Health and Safety Code section 108100, et seq.)
- California Air Quality Laws (California Health and Safety Code section 39000, et seq./17 California Code Regulations)
- Aboveground Petroleum Storage Act (California Health and safety Code section 25270, et seq.)
- Underground Storage Tank Law (California Health and Safety Code section 25280, et seq./23 California Code Regulations)
- Solid Waste (Title 27 California Code of Regulations, Division 2)

3.7.2 Affected Environment

The Navy has implemented a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all current activities at OTC. These programs are governed by applicable Office of the Chief of Naval Operations instructions and installation-specific instructions issued by each Base Commander. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes.

The Navy has prepared a combined Spill Prevention, Control, and Countermeasure Plan, Stormwater Pollution Prevention Plan, and Oil/Hazardous Substance Spill Contingency Plan governing operations at OTC. This combined plan and the Area Contingency Plan address hazardous material storage and containment, spill response equipment and cleanup measures for large and small spills, reporting procedures, inspections and recordkeeping, security, and personnel training. The Commander, Navy Region Southwest Waste Management Plan for the San Diego Metro Area is also applicable to OTC operations. This plan specifies hazardous waste management responsibilities for waste generators, including hazardous materials and hazardous waste accumulation, storage, recordkeeping, training, and disposal to ensure compliance with all applicable federal, state, and local regulations (Navy, 2015).

3.7.2.1 Hazardous Materials

The Navy uses and stores hazardous materials at OTC Site 1 and OTC Site 2 as described below:

- OTC Site 1
  - Hazardous materials, including coatings, adhesives, solvents, fuels, and cleaners, are used for depot-level maintenance and repair activities, paint shop activities, such as coating operations, coating removal, electroplating, research and development work, and assembly operations associated with the testing and installation of communications equipment.
  - Materials are secured in hazardous waste storage area lockers within Building 73, located south of Building 7. Two 500-gallon, double-walled, aboveground storage tanks are used to store diesel fuel for emergency generators, and one 120-gallon aboveground storage tank is used to store propane fuels for another emergency generator (Navy, 2021b).
- OTC Site 2
  - No hazardous materials currently are used on site; however, small volumes are stored on site in lockers and storage tanks.
  - Three small hazardous materials lockers are located in Building 2555A.

- Several small hazardous materials lockers supporting equipment refurbishment and repair and touch up operations are located outside Building 34.
- One small hazardous materials locker is located inside Building 40.
- A 1,600-gallon, double-walled, aboveground storage tank is used to store diesel fuel for an emergency generator at Building 2555A (Navy, 2021b).
- Several tactical support equipment generators with integral double-walled, 80-gallon fuel tanks are located northwest of Building 40 (these fuel tanks are normally empty or contain only small volumes of fuel).
- Herbicides are not currently stored or used anywhere at OTC as they are not needed due to a lack of vegetation on site. No radioactive materials are stored or used at OTC (Navy, 2021b).

3.7.2.2 Hazardous Waste

Various types of hazardous wastes have been generated and/or stored at OTC since the 1940s (see below, Section 3.7.2.4, for additional information). Current operations at OTC continue to generate hazardous wastes. Three U.S. Environmental Protection Agency (USEPA) hazardous waste generator identification numbers are currently associated with OTC:

- OTC Site 1: CA0000066373 for the Naval Information Warfare Center Pacific OTC Site 1 and for Commander Navy Region Southwest Naval Facilities Engineering Command operations associated with Air Force Plant 19, Large Quantity Generator.
- OTC Site 2: CAR000283085 for the Navy Regional Plant Equipment Office, Small Quantity Generator.
- OTC Site 2: CAR000195479 for the Naval Information Warfare Center Pacific San Diego Sports Arena Boulevard Facility, Small Quantity Generator.

Hazardous wastes currently generated at OTC typically consist of waste paint, coating waste materials, waste thinners, waste solvents, waste and mixed oil, waste adhesives, paint sludge, soiled wipes, solder debris, low-pH liquids, and metals (including lead). A 90-day hazardous waste accumulation area is located at OTC Site 1 in Building 73 and a small 90-day hazardous waste accumulation yard is located at Building 34 at OTC Site 2 for the Naval Information Warfare Center Pacific San Diego Sports Arena Boulevard Facility (Navy, 2021b).

Historically, the quantity of hazardous waste generated at the Naval Information Warfare Center Pacific OTC (Air Force Plant 19), USEPA hazardous waste generator identification number CA0000066373, has varied considerably from year-to-year. For example, annual waste generation from 2008 to 2018 ranged from 1.8 tons (2013) to 82.9 tons (2016). Annual waste generation at the Naval Information Warfare Center Pacific San Diego Sports Arena Boulevard Facility from 2008 to 2018 ranged from 0.22 tons (2018) to 2.77 tons (2009) (California Department of Toxic Substances Control, 2020). Waste generation data for the Navy Regional Plant Equipment Office are available only for 2018, when 0.29 tons were generated.

3.7.2.3 Special Hazards

Special hazards, such as lead-based paint, asbestos-containing materials, and PCBs, are present or have the potential to be present, in many of the OTC buildings.

The Navy conducted lead-based paint surveys at OTC in 1994, prior to the transfer of the property. The surveys confirmed the presence of lead-based paint within OTC buildings. The Navy partially removed or encased the lead-based paint at OTC buildings during several renovations (Navy, 2021b).

Pipes or other insulation, ceiling tiles, exterior siding, roof shingles, tile mastic, and sprayed-on soundproofing are some of the materials found in buildings constructed prior to 1989, including those at OTC, that may contain asbestos. Limited surveys performed at OTC have confirmed the presence of asbestos in many of the buildings. Asbestos remediation (e.g., removal) was partially performed in facility areas that underwent renovation. Most of the office spaces inside the buildings have been remediated and all asbestos has been removed from Building 4 (Navy, 2021b).

Buildings constructed between 1950 and 1979, including those at OTC, potentially have materials and/or equipment such as caulk, paint, light ballasts, or transformers that contain PCBs. All PCB containing transformers that were present historically at OTC have been removed, and no remaining PCB sources have been identified (Navy, 2021b). However, there may be residual PCBs present in older building materials such as caulk, paint, and spray-on fireproofing.

3.7.2.4 Contaminated Sites

Prior to the NAVWAR's occupation of the OTC property, the site was used for various other industrial activities, including aircraft manufacturing operations during WWII. Buildings 1, 2, 3, 7, and 8 were used for aircraft manufacturing purposes; Buildings 2, 3, and 8 were used for subassembly operations; and Buildings 1 and 7 were used as processing areas for aircraft housings. The locations of these buildings are shown on Figure 3.7-1. Activities in these areas included painting, etching, cleaning, and plating parts. Wastes generated as a result of these manufacturing, processing, and subassembly activities may have included the following: waste oil; paint sludge; plating materials; spent chromic, hydrochloric, and nitric acids; and degreasing solvents (Navy, 2012b). Past disposal practices and inadvertent releases of these wastes resulted in onsite environmental contamination.

The U.S. Air Force reacquired the site in 1957. At that time, the site was leased and operated by General Dynamics, which constructed four support buildings and used the site for the manufacture and assembly of the Atlas missile. The General Dynamics portion of the site was acquired by Martin Marietta in 1994 (Navy, 2020d).

Between 1984 and 1994, and when the facility was operational and industrial processes were active, site conditions at the facility were investigated under the Air Force IR Program. The Air Force conducted an IR Program Phase I review of past operations and waste management practices. This investigation identified five sites that required further evaluation for possible site contamination. Subsequent evaluations determined that the known releases at these sites were small and had been remediated and, therefore, recommended no further actions (Navy, 2020b).

In 1994, the Navy conducted an environmental baseline survey as part of a property transfer to the Air Force. The baseline survey identified 11 potential new sites for inclusion in the IR Program due to potential contamination in soil and groundwater. All 11 sites were at OTC Site 1; no sites were identified at OTC Site 2. Nine of these sites later became IR Sites 1, 2, 3, 4, 5, 7, 9, 10, and 11 (Figure 3.7-1). Two sites (6 and 8) identified in a 1986 baseline survey were later eliminated as it was confirmed that no contaminant releases had occurred; consequently, these did not become IR sites.

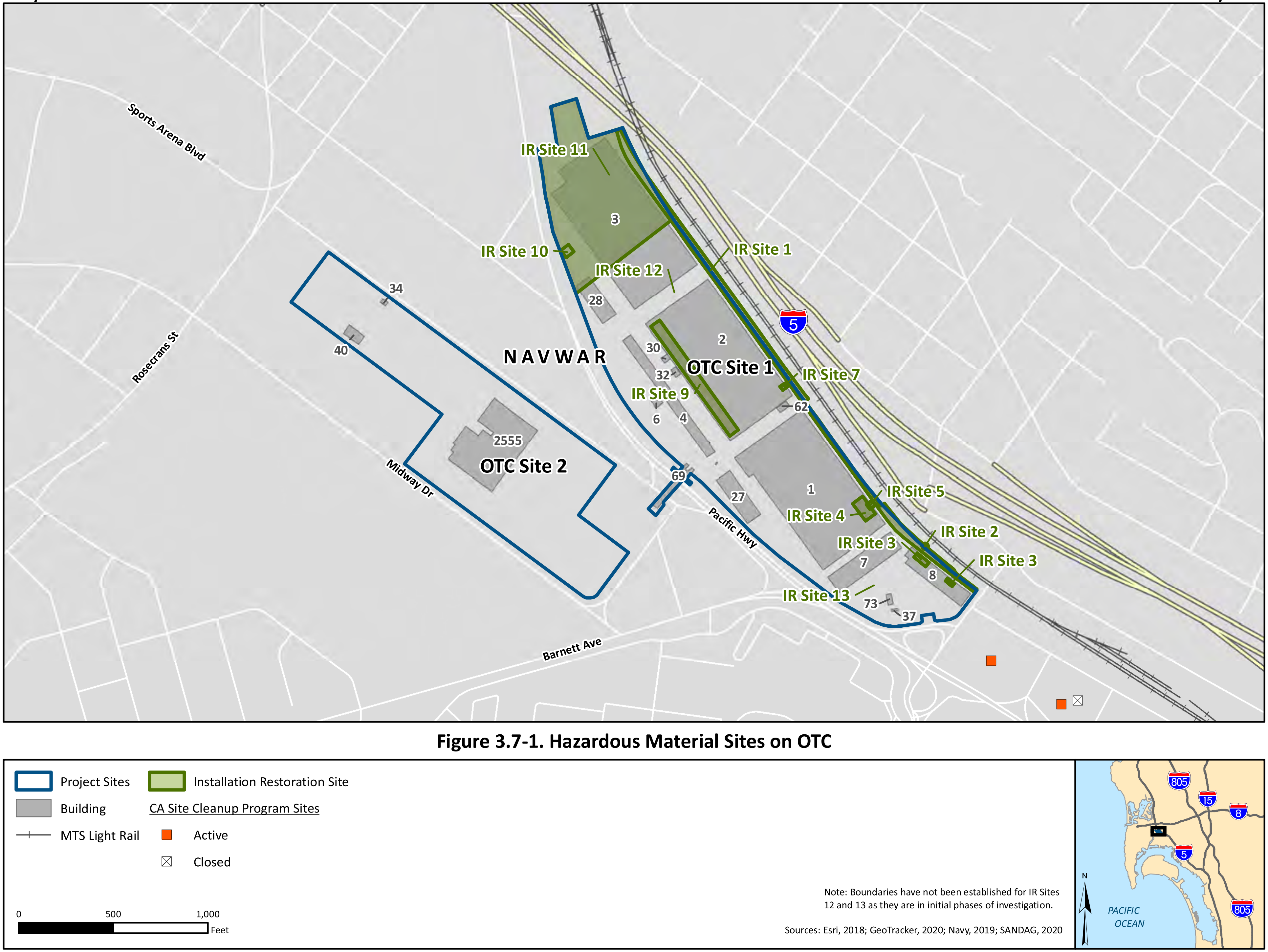


Figure 3.7-1. Hazardous Material Sites on OTC

Two other sites (12 and 13) were added in 2020. Boundaries have not been established for IR Sites 12 and 13 as they are in initial phases of investigation. Under the Defense Environmental Restoration Program, sites are managed to two outcomes: site closure or response complete (which means long-term management is required).

Table 3.7-1 provides a summary of the OTC IR sites and Figure 3.7-1 shows their locations.

Table 3.7-1 Installation Restoration Sites at OTC

IR Site	*Status*	*Decision Document*	*Comments*	*Path Forward*
1 **(Active)**	Response complete (land use controls)	ROD (2014) and Post ROD Memorandum to the Administrative Record File (2021)	The site is a railroad spur on the eastern boundary of OTC Site 1. The Navy recently documented land use controls as the remedy for IR Site 1 in the Memorandum to the Administrative Record File Revision to the Remedy (Post ROD).	Navy is preparing a Land Use Control Remedial Design document and implementing land use controls.
2, 3, 4, 5, and 7	Investigation complete for industrial use	None	2009 Final Site Investigation Report issued by the Navy. “No further investigation for industrial use” letter issued by the California Department of Toxic Substances Control. Previous Human Health Risk Assessments for residential scenarios showed potential carcinogenic and other (non-cancer) hazard risks.	Navy is preparing a Site Investigation Addendum with revised risk evaluation and recommendations for site closure. If site closure is not approved for any of the sites, land use controls will need to be addressed during reuse planning.
6 and 8	Sites closed	None	Closed after 1986 Initial Assessment Study (Preliminary Assessment) showed no release occurred.	No action.
9	Site closed	ROD (2014)	No further action.	No action.
10	Site closed	ROD (2014) and Final Data Collection Summary Report and Site Closure Request (2021)	IR Site 10 was originally combined with IR Site 11 based on presumed multiple sources contributing to the groundwater VOC plume under the northern portion of Building 3. Data collected in late 2019/early 2020 demonstrated that there was no hazardous substance release from IR Site 10. Residual VOC concentrations in groundwater in the vicinity of IR Site 10 are attributed to IR Site 11 and will be addressed by IR Site 11 action.	No action.
11 **(Active)**	Remedial action ongoing	ROD (2014)	In-situ groundwater remediation and soil vapor extraction system in operation since 2014. Remediation has reduced chlorinated VOC concentrations in groundwater and soil gas. Also operating a sub-floor ventilation system for vapor intrusion mitigation.	Additional data collection conducted in late 2019/early 2020 to address remedy optimization. Based on the results, the Navy will be conducting further investigation of a chlorinated VOC source and continuing remediation and vapor intrusion mitigation.

IR Site	*Status*	*Decision Document*	*Comments*	*Path Forward*
12 **(Active)**	Investigations planned	None	Preliminary sampling in 2019 and 2020 showed concentrations of TCE beneath the roadway between Buildings 2 and 3 above IR Site 11 remedial goals in soil vapor and groundwater, but also showed the contamination did not originate from the source at IR Site 11.	Additional investigations are planned to initiate the CERCLA process.
13 **(Active)**	Investigations planned	None	Preliminary sampling in 2019 and 2020 showed concentrations of VOCs above regulatory screening levels in soil vapor and groundwater beneath the parking lot south of Building 7.	Additional investigations are planned to initiate the CERCLA process.

Legend: CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; IR = Installation Restoration; ROD = Record of Decision; TCE = trichloroethylene; VOCs = volatile organic compounds.
Source: Navy, 2012b, 2014a, 2014b, 2019a, 2020d, 2021a, 2021c.

The following discussion focuses on the four remaining active IR Sites (1, 11, 12 and 13) and IR Site 10 that was closed in 2021. The Final 2011 Site Management Plan for Naval Base Point Loma dated May 2012 (Navy, 2012b), provides detailed information about the other IR sites that have been closed or for which investigation is complete.

IR Site 1 is the NAVWAR-owned railroad spur located along the entire eastern edge of the OTC property (Figure 3.7-1). This railroad spur was disconnected from the BNSF railroad, and the rails and ties were removed for recycling in 2011. The site is unpaved, and predominantly consists of bare soil, parts of which are covered by a thin layer of gravel (Navy, 2012b).

IR Site 1 was identified based on observations of a cleaning crew from Building 3 discharging the contents of wet/dry vacuums onto this spur. The 1994 environmental assessment speculated that it was likely that waste products and cleaning wastes from past operations had also been discharged into the area along the tracks because it is at a low elevation, not covered by asphalt, and located next to manufacturing buildings. When the facility was operational as an aircraft manufacturing facility, the railroad spur was used for shipping and receiving a variety of raw materials and finished products. The specific types of raw materials delivered and loaded at this location are unknown. There are no known operational areas currently involving the use or storage of chemicals at IR Site 1 (Navy, 2012b).

During various investigations beginning in 1994, the area of IR Site 1 soils (surface to approximately 8 feet below ground surface) between Buildings 1 and 2 was found to be impacted with the PCB Aroclor 1260 at concentrations above the project action level. This PCB-impacted soil area was approximately 0.06 acre in size (less than 3 percent of the IR Site 1 area). Aroclor 1260 was reported in a groundwater sample collected from one monitoring well in the same area during the extended site inspection. The depth to groundwater underlying IR Site 1 ranges from approximately 5.5 to 8 feet below the ground surface. PCBs in the soil are considered residual because PCB sources at OTC were previously assessed and remediated and there is no known remaining PCB source (Navy, 2012b).

Based on concentrations and spatial distribution, metals present in soil and groundwater at IR Site 1 are interpreted to represent natural conditions and are not indicative of a Comprehensive Environmental Response, Compensation, and Liability Act-reportable release. Polycyclic aromatic hydrocarbons, a class of organic compounds, some of which represent potential health risks such as carcinogenicity) present in IR Site 1 soils appear to be related to fill emplacement activities prior to construction of the buildings and/or from railroad operations. The polycyclic aromatic hydrocarbons also do not appear to be related to a release governed by the Comprehensive Environmental Response, Compensation, and Liability Act. VOCs; (class of organic compounds, some or which represent potential health risks including carcinogenicity) in groundwater were present at IR Site 1 at concentrations less than project action levels (Navy, 2012b).

The Navy prepared a ROD for the site investigation of IR Site 1 in 2014, identifying excavation and offsite disposal as the selected remedy (Navy, 2014a). Approximately 700 tons of PCB-contaminated soil was excavated and disposed of at licensed waste disposal facilities in October 2016 as part of a completed remedial action. The excavation was backfilled with clean fill material and the area restored to the original pre-excavation grade. No Aroclor 1260 was detected in confirmation soil samples or groundwater samples. In the Remedial Action Completion Report, the Navy recommended No Further Action and that the site be closed because the remedial action successfully met the ROD requirements. The San Diego Regional Water Quality Control Board and California Department of Toxic Substance Control issued a letter to the Navy stipulating “No Further Action for industrial use.” In March 2021, the Navy prepared a Memorandum to the Administrative Record File, Revision to the Remedy (Post-ROD) for IR Site 1 documenting land use controls as the remedy for IR Site 1 (Navy, 2021a). Land use controls will include restrictions on residential use and restrictions on intrusive (soil disturbance) activities. The Navy is preparing a Draft Land Use Control Remedial Design document for IR Site 1 that will describe the details of the land use controls and requirements. Based on the land use control remedy, IR Site 1 will be subject to annual inspections and 5-year interval remedy evaluations and reviews because concentrations of chemicals in soil will remain at the site above levels acceptable for unlimited use and unrestricted exposure.

IR Site 10 is located at the former location of Building 33 (Figure 3.7-1), which was constructed in 1940 as a reinforced concrete bunker and used for the storage of pyrotechnics and munitions. This structure was closed in the 1980s. At that time, personnel reported what appeared to be sludge seeping through cracks in the concrete floor. The roof of the former building extended to 2 feet above the ground surface and the floor of the building extended 8 feet below grade. In 2003, Building 33 was demolished and the area was backfilled. This area is currently being used as a parking lot (Navy, 2012b).

In 2014, a Defense Environmental Restoration Program ROD was prepared for IR Sites 10 and 11 (Navy, 2014b). IR Site 10 was originally combined with IR Site 11 based on presumed multiple sources contributing to the groundwater VOC plume under the northern portion of Building 3. The selected remedy included soil vapor extraction to remove VOCs from the vadose zone (i.e., zone that extends from the top of the ground surface down to the water table) with enhanced anaerobic bioremediation to convert chlorinated VOCs in groundwater to innocuous end-products (Navy, 2014b). The soil vapor extraction system installed north of Building 3 has been operating since June 2015. This system is designed to extract VOC-contaminated soil gas. Contaminated groundwater was treated by injection of emulsified vegetable oil and bioaugmentation culture through a series of injection wells and two injection events (Navy, 2021b).

Semiannual monitoring through 2019 indicated that VOC concentrations in soil gas and groundwater at all progress monitoring locations except for one groundwater monitoring well, were below the remedial goals established in the ROD. Remediation progress monitoring reports recommended continued soil vapor extraction system operation and semiannual progress monitoring until the soil gas and groundwater source areas are remediated. Termination of system operation is dependent upon the achievement of remedial goals (as identified in the ROD) and resolution of regulatory agency concerns (Navy, 2021b).

Supplemental data collected in late 2019/early 2020 demonstrated that there was no hazardous substance release from IR Site 10. Instead, residual VOC concentrations in groundwater in the vicinity of IR Site 10 are attributed to IR Site 11 and, therefore, addressed by IR Site 11 action. Because there is no evidence that a release of a hazardous substance or petroleum to soil or groundwater occurred at IR Site 10, the Navy recommended site closure for IR Site 10 (Navy, 2021c). The San Diego Regional Water Quality Control Board (letter dated March 24, 2021) and California Department of Toxic Substances Control (letter dated April 1, 2021) concurred with the Navy's recommendation to close IR Site 10.

IR Site 11 is located within the northern portion of Building 3 (Figure 3.7-1). Building 3, constructed in 1940, has been utilized in the past and is currently used as the main manufacturing and subassembly building. From 1941 to 1948, the site produced B-24 airplanes. From 1948 to 1951, moving and storage companies used the site. In 1951, the site was used to produce aircraft, rockets, and missiles. Historically, site personnel identified a sanitary sewer line break in this area that warranted further investigation (Navy, 2012b).

Subsequent investigations determined the release of metal cleaning and degreasing solvent related to past aircraft fabrication activities in Building 3 impacted groundwater in the northern part of the building. Based on their proximity and similar chemicals of concern, IR Site 10 and IR Site 11 were managed by the Navy as one site. Previous investigations concluded that VOCs in groundwater beneath IR Sites 10 and 11 had the potential to migrate off-property and pose a health risk to workers (Navy, 2012b).

The primary VOCs were perchloroethylene and trichloroethylene and associated breakdown products cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride. Trichloroethylene and vinyl chloride were present at the highest concentrations and with the greatest spatial extent. Risk assessment results indicated that the primary threat to human health was associated with the potential migration of VOCs into indoor air. However, uncertainties remained regarding the extent of VOCs in groundwater and soil gas to the south, west, and particularly to the north of the suspected source area (former underground storage tanks); the presence of VOCs in indoor air; and the associated risk to human health in these areas (Navy, 2012b).

In the Defense Environmental Restoration Program ROD prepared for IR Sites 10 and 11, the selected remedy included soil vapor extraction to remove VOCs from the vadose zone (i.e., zone that extends from the top of the ground surface down to the water table) with enhanced anaerobic bioremediation to convert chlorinated VOCs in groundwater to innocuous end-products (Navy, 2014b). The soil vapor extraction system installed north of Building 3 has been operating since June 2015. This system is designed to extract VOC-contaminated soil gas. Contaminated groundwater was treated by injection of emulsified vegetable oil and bioaugmentation culture through a series of injection wells and two injection events. Vapor intrusion mitigation measures and indoor air monitoring is also being conducted in the northern portion of Building 3 for potential vapor intrusion (Navy, 2021b).

Semiannual monitoring through 2019 indicated that VOC concentrations in soil gas and groundwater at all progress monitoring locations except for one groundwater monitoring well, were below the remedial goals established in the ROD. Remediation progress monitoring reports recommended continued soil vapor extraction system operation and semiannual progress monitoring until the soil gas and groundwater source areas are remediated. Termination of system operation is dependent upon the achievement of remedial goals (as identified in the ROD) and resolution of regulatory agency concerns (Navy, 2021b).

The Navy conducted field investigations at IR Site 11 from late 2019 through the spring of 2020. The objective of the investigations was to determine whether response complete under Comprehensive Environmental Response, Compensation, and Liability Act could be achieved for IR Site 11 or if the current remedy-in-place requires optimization (Navy, 2020d). The results of the investigation demonstrated that the response is not complete, and a source of trichloroethylene remains at IR Site 11 that will require further investigation. Remediation and vapor intrusion mitigation is ongoing.

IR Sites 12 and 13 The Navy confirmed evidence of a past release and contamination beneath the roadway between Buildings 2 and 3 during the late 2019 through spring of 2020. Preliminary sampling results showed concentrations of trichloroethylene above IR Site 11 remedial goals in soil vapor and groundwater, but also showed the contamination did not originate from the source at IR Site 11. The Navy established new IR Site 12 to initiate additional investigations and remediation in this area in accordance with the regulatory process (Navy, 2020d).

During recent environmental field investigations, the Navy also discovered evidence of a past release and contamination beneath the parking lot south of Building 7. Preliminary sampling results showed concentrations of VOCs above regulatory screening levels in soil vapor and groundwater. The Navy established new IR Site 13 to initiate additional investigations and remediation in this area in accordance with the regulatory process (Navy, 2020d).

The Navy conducted follow-up indoor air sampling in five NAVWAR buildings in April and May 2020 to verify that the recently detected concentrations of VOCs, specifically trichloroethylene, in subsurface areas did not present an indoor vapor intrusion concern. Results for indoor air samples from all five buildings were below the regulatory response action level for the VOCs of concern. The Navy will continue to periodically verify that VOCs in the subsurface are not presenting a vapor intrusion concern at the two new IR site areas (Navy, 2020d).

Restoration Advisory Board

In 2008 and 2009, as part of the IR Program, the Navy solicited participation from the community and established a Restoration Advisory Board related to IR sites at nearby Naval Base Point Loma, including OTC. The Restoration Advisory Board is a consultative body, and the Naval Base Point Loma Restoration Advisory Board is composed of members of the local community and representatives from the Navy, San Diego Regional Water Quality Control Board, and California Department of Toxic Substances Control. The first Naval Base Point Loma Restoration Advisory Board meeting occurred in January 2010, and the Restoration Advisory Board convenes quarterly, reviewing and commenting on documents, and relaying information from the Navy and regulators to the local community. Restoration Advisory Boards act as a focal point for the exchange of information about environmental investigation and cleanup between each base and the local community (Navy, 2012c).

Land Use Controls

Land use controls are used when it has been determined that it is safe to leave specific types and concentrations of contamination at a property if defined restrictions are followed. The land use controls are specified in the Comprehensive Environmental Response, Compensation, and Liability Act decision document that identifies the remedy for environmental contamination that best fits the site condition. The regulatory agencies (in this case the California Department of Toxic Substances Control is the lead state agency and is supported by the San Diego Regional Water Quality Control Board) and the property owner agree to one or more land use controls that allow ongoing use of the property within the limits defined in the decision document. Common land use control provisions include establishing that a remedial system (e.g., monitoring wells) would not be disturbed, limiting onsite soil disturbance or groundwater use, restricting the use of the property to commercial or industrial, and disallowing sensitive uses where there is a potential for exposure.

Based on investigations at the previously discussed IR sites, the Navy (2021b) has developed the following interim land use controls that will apply until final land use controls are established in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act:

- IR Sites 1, 2, 3, 4, 5, and 7
  - Prohibition on intrusive work and soil disturbance (e.g., grading, trenching, excavation) unless such work is conducted in accordance with a soil management plan reviewed and approved by the Navy and regulatory agencies
  - Prohibition against construction of buildings with ground-floor residential units or ground-floor occupancies with sensitive receptors, including schools, childcare facilities, hospitals, and senior care facilities, overlying the area requiring institutional controls.

The restrictions are to remain in place unless and until contaminant concentrations in soil are removed or reduced to levels appropriate for unlimited use and unrestricted exposure.

- IR Site 11, 12, and 13
  - Prohibition on intrusive work and soil and groundwater disturbance (e.g., grading, trenching, excavation) unless such work is conducted in accordance with a soil and groundwater management plan reviewed and approved by the Navy and regulatory agencies
  - Prohibition on installation of groundwater production wells for any reason other than approved response actions or dewatering activities
  - Prohibition on disturbing, removing, or altering components of the remedy (including monitoring wells, survey monuments or bollards, groundwater and soil vapor remediation wells, treatment materials and facilities, and associated equipment and warning signs) and security features (such as locks on wells, site fencing, or signs) unless in accordance with a plan for alterations to the remedial system approved by the Navy and regulatory agencies
  - A requirement for engineered vapor intrusion mitigation systems acceptable to the Navy and regulatory agencies for all buildings constructed on the area requiring institutional controls
  - Prohibition against construction of buildings with ground-floor residential units or ground-floor occupancies with sensitive receptors, including schools, childcare facilities, hospitals, and senior care facilities, overlying the area requiring institutional controls.

In the case of vapor intrusion, land use controls will remain in place until VOC concentrations in groundwater and soil vapor do not pose an unacceptable vapor intrusion risk to sensitive receptors.

The land use controls above will be maintained until chemical concentrations are at levels that allow for unlimited use and unrestricted exposure. With the approval of the Navy and concurrence of the regulatory agencies, a future transferee or lessee could seek to carry out additional response activities (e.g., soil removals) to reduce contamination to levels allowing unlimited use and unrestricted exposure and seek removal or modification of land use controls. The Navy will conduct or will cause to be conducted by a future transferee or lessee, annual inspections of land use controls, and the Navy will conduct 5-year reviews in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act to determine whether the remedy remains protective of human health and the environment.

Other Ongoing Investigations

As part of the Navy's overall program to identify contamination from historical operations, the Navy is currently investigating potential contamination related to chemicals known as per- and poly-fluoroalkyl substances (commonly referred to as PFAS). This family of chemicals was developed in the 1940s and includes the chemicals perfluorooctane sulfonate (used in stain- and water-resistant products) and perfluorooctanoic acid (used in protective coatings). The use of these compounds (mostly perfluorooctane sulfonate) in firefighting foam began in the 1960s and they were put into routine use by the early 1970s.

The USEPA identifies PFAS as "emerging contaminants" that are of environmental concern because of their persistence in the environment and organisms, migration potential in aqueous systems (e.g., groundwater), historically ubiquitous use in commercial products, and possible adverse health effects at low levels of exposure. Currently, only three PFAS compounds have USEPA-derived toxicity values available to help understand potential health effects from exposure: perfluorobutanesulfonic acid, perfluorooctanoic acid, and perfluorooctane sulfonate. In 2016, USEPA issued a drinking water lifetime health advisory of 70 parts per trillion for perfluorooctanoic acid and perfluorooctane sulfonate. When both perfluorooctanoic acid and perfluorooctane sulfonate are found in drinking water, the combined concentrations of perfluorooctanoic acid and perfluorooctane sulfonate should be compared with the 70 parts per trillion lifetime health advisory level. While not legally enforceable, the lifetime health advisory has been a driving force for investigation and remediation efforts (Navy, 2020b).

Although PFAS have been used in a variety of applications such as metal plating operations and photographic imaging, the most prevalent application of PFAS at Navy installations has been in aqueous film-forming foam for firefighting. The Navy has used aqueous film-forming foam containing PFAS in fire training exercises, suppression of aircraft and other vehicle fires, and aircraft hangar fire suppression systems at many of its installations across the United States. Despite industry efforts to reduce the use of PFAS, some PFAS are still required as an integral component of aqueous film-forming foam by the current military specification (Navy, 2020b).

The Navy issued a Draft Preliminary Assessment Report of PFAS compounds at the Naval Base Point Loma, Old Town, and Taylor Street facilities to the regulatory agencies in January 2020. The report evaluated potential areas and facilities where substances containing PFAS were potentially stored, handled, or used. A total of 23 areas of interest were initially evaluated for the potential presence of PFAS at OTC and the Taylor Street facilities (Note: The Taylor Street facility consists of approximately 4.3 acres and is located at 4635 Pacific Highway, approximately 0.5 miles north of OTC). The following five sites at OTC were identified as having the potential to be impacted by substances known to contain PFAS:

- Building 2 Outdoor Drain (IR Site 7)
- Building 2 Floor Vaults (IR Site 9)
- Building 3 Sewer Line (IR Site 11)
- Building 1 Acids and Plating Materials (Area of Interest 1)

- Building 7 Acids and Plating Materials (Area of Interest 3)

These five sites were recommended for further investigation under the site investigation phase of the Comprehensive Environmental Response, Compensation, and Liability Act process (Figure 3.7-2) (Navy, 2020b). The Draft Preliminary Assessment Report received regulatory agency comments and was finalized in summer 2020.

Contaminated Sites–Neighboring (non-Navy) Properties

Historically, the area around OTC was primarily industrial. Several gas stations, dry cleaners, construction and painting businesses, dairy businesses, plant nurseries, lumber yards, automotive repair and sales, and other industrial businesses occupied surrounding properties. Most of these sites used for industrial purposes were redeveloped over the past 30 years as retail and commercial businesses; however, some industrial businesses are still located in the vicinity (Navy, 2021b).

In February 2020, the Navy prepared an Environmental Condition of Property report for OTC. This report assesses environmental risks, provides disclosure associated with the real property for redevelopment, and determines actions necessary to protect human health and the environment prior to any real property transaction. The Environmental Condition of Property report identified numerous sites within 0.25 miles of OTC with potential environmental concerns associated with current and historical uses. These sites include former and current hazardous waste generators, underground storage tanks or leaking underground storage tank sites, and dry-cleaning facilities. The Environmental Condition of Property report determined that operations at most of the nearby sites would not be expected to result in adverse environmental conditions at OTC due to their documented onsite conditions (e.g., contamination is localized) or regulatory status (e.g., the California Department of Toxic Substances Control issued a No Further Action letter). However, the Environmental Condition of Property report identified the following two sites that may be associated with an existing subsurface VOC contaminant plume with the potential to migrate onto the southern boundary of OTC. The extent of this plume has not been characterized in detail (Navy, 2021b).

4085 Pacific Highway and 4055 Pacific Highway (Active Case)

This site is located at the intersection of Pacific Highway and Bandini Street. A dry-cleaning business was associated with the adjacent property at 4085 Pacific Highway from the 1960s to 2002. An outdoor perchloroethylene tank was connected to the dry-cleaning machine inside the building through underground piping. One or more releases of perchloroethylene occurred during site operations. Environmental investigations in the late 1980s and early 1990s discovered evidence of soil and groundwater impacts from these releases. In 2015, a limited subsurface investigation was conducted and analytical results from soil samples showed that perchloroethylene concentrations were below screening levels (e.g., contaminant levels were below a regulatory threshold and therefore do not require additional investigation). However, groundwater analytical results indicated that VOC concentrations were above the maximum contaminant levels, and sub-slab soil vapor results indicated that VOC concentrations exceeded the vapor intrusion screening levels. This site is currently classified as “Active” by the California Department of Toxic Substances Control (Navy, 2021b).

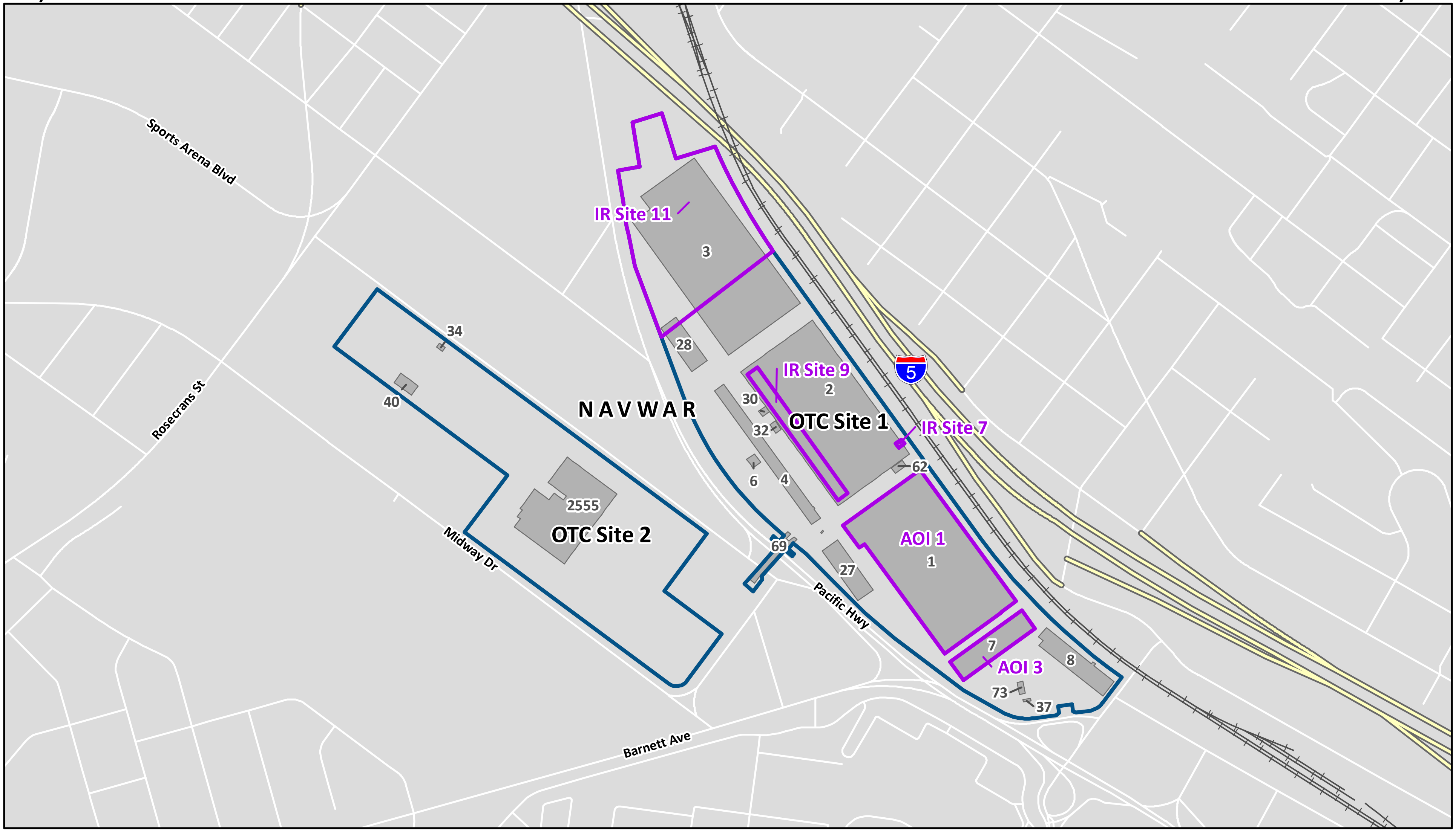
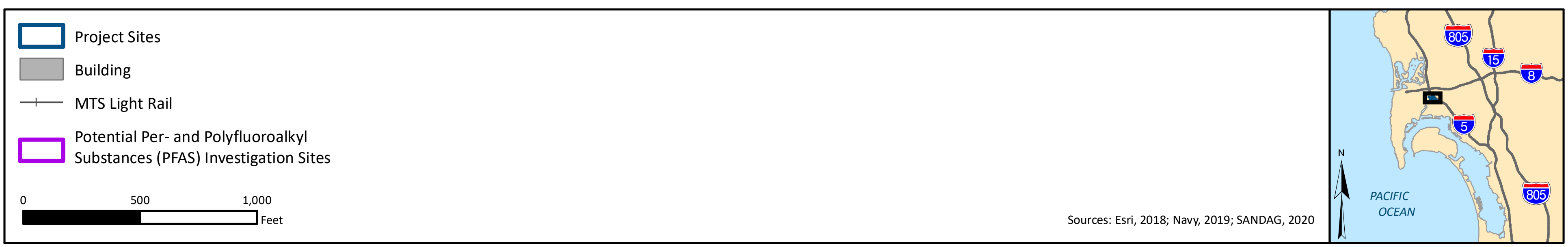


Figure 3.7-2. Potential Per- and Polyfluoroalkyl Substances Investigation Sites



4141 Pacific Highway (Active Case)

This site houses the Veterans Village of San Diego facility and encompasses approximately 2 acres. Four underground storage tanks with unknown contents were discovered and removed in May 2004 during earthwork activities associated with a facility expansion project in the western portion of the site. The tanks were believed to be associated with a gasoline service station that operated between 1936 and 1952 at the northwestern corner of the site.

The site was entered into the California Voluntary Assistance Program and a No Further Action letter for the underground storage tanks was issued in June 2006. During site assessment activities and investigations, chlorinated VOCs, including perchloroethylene, trichloroethylene, cis-1, 2 dichloroethene, and vinyl chloride were reported in groundwater, soil gas, and soil samples. The contaminant assessment report indicated that chlorinated solvents may have originated on site because historical use of the property may have included a vehicle service facility or dry-cleaning facility. This site is currently classified as “Active” by the California Department of Toxic Substances Control (Navy, 2020b).

As a result of the VOC contamination, on June 15, 2016 the San Diego Regional Water Quality Control Board established deed restrictions (Covenant and Environment Restriction of Property) for a portion of the area. The approximately 2.5-acre affected area is bounded by Kurtz Street and railroad tracks to the north, Bandini Street to the south, Pacific Highway to the southwest, and Couts Street to the west (Figure 3.7-3).

Figure 3.7-3 Offsite Contaminated Sites

Land use controls established for this area limit development only to industrial or commercial uses and prohibit any activities that could disturb or expose underlying soils without first obtaining permission from the San Diego Regional Water Quality Control Board (San Diego County, 2016).

The nearest of these sites to OTC (4141 Pacific Highway) is approximately 300 feet southeast of the OTC Site 1 southern boundary. The northernmost edge of the land use control area is approximately 475 feet southeast of the OTC Site 1 southern boundary (Figure 3.7-3).

3.7.3 Environmental Consequences

The analyses of environmental consequences described in the subsections below address issues concerning hazardous materials, hazardous waste, special hazards, and contaminated sites related to the Proposed Action Alternatives on and in the vicinity of OTC.

The assessment of potential impacts considers the extent or degree to which implementation of an action alternative would increase the human health risk or environmental exposure resulting from the storage, use, handling, transportation, or disposal of hazardous materials hazardous wastes, and special wastes. The assessment also considers whether the use, transportation, storage, or disposal of hazardous items would violate any federal and state laws regulating these materials. The significance of potential impacts from hazardous materials was determined by assessing the types and quantities of materials likely to be used or generated by project construction and future project operations and extent to which measures would be implemented to safely store, apply, and dispose of materials in a manner that would prevent releases to the environment and exposures of workers to health risks. Similarly, the significance of potential impacts from hazardous wastes, special hazards, and contaminated sites was determined by assessing the types and quantities of contaminants and special hazards likely to be encountered during demolition and construction activities and the extent to which measures would be implemented to prevent releases to the environment and exposures of workers to health risks. The significance of potential impacts related to special hazards and contaminated sites also considers whether residual contamination (i.e., contaminant concentrations remaining following ongoing remediation activities) would be appropriately protective of future site uses. Significant impacts would occur if the project alternative resulted in non-permitted contaminant releases, soil, air, or water contaminant concentrations above appropriate regulatory limits, or human exposures that exceeded state or federal action limits.

3.7.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur and there would be no change in the storage or use of hazardous materials or the generation of hazardous or special wastes. The use, storage, and disposal of hazardous materials, and generation and disposal of hazardous wastes, associated with ongoing and future facility maintenance activities at OTC would continue to be managed in accordance with existing Navy plans (i.e., the combined Spill Prevention, Control, and Countermeasure Plan, Stormwater Pollution Prevention Plan, and Oil/Hazardous Substance Spill Contingency Plan and the Area Contingency Plan) and applicable state and federal regulations. Ongoing remediation and monitoring activities related to the management of active IR sites would continue. As such, implementation of the No Action Alternative would not exacerbate existing risks associated with potential contaminant releases to the environment or to human health from contaminant exposures. Therefore, impacts from the implementation of the No Action Alternative would be less than significant.

3.7.3.2 Alternative 1: NAVWAR-Only Redevelopment

Hazardous Materials Management

During the construction and renovation phase of Alternative 1, hazardous materials would be stored and used on site. In particular, petroleum substances, such as diesel and gasoline, would be stored and used to run equipment, and paints, adhesives, solvents, and similar construction materials would be stored and used on site. Construction contractors would implement BMPs, such as those included in the stormwater pollution prevention plan for safe storage of hazardous materials and the prevention of and response to spills related to the operation of construction equipment, to minimize risks. Construction contractors would also be required to follow all state, federal, and Navy requirements to properly store, transport, and handle their hazardous materials so that there would be a minimal risk to human health or the environment. If the aboveground storage tanks are removed, they would be disassembled and their contents properly disposed of in accordance with all federal and state regulations, including being properly defueled, triple rinsed, and the materials properly disposed of at an offsite recycling or other designated facility.

For Alternative 1, all NAVWAR functions would remain on OTC. Thus, for the operational phase of the project (post-construction), hazardous materials management at OTC is expected to be the same as current management practices. The types, quantities, and applications of hazardous materials required would remain the same as current conditions. If a renovated building would be supplied with new emergency generators with aboveground storage tanks, these tanks would conform to all requirements and be added to the Naval Base Point Loma Spill Prevention, Control, and Countermeasure Plan and other plans, as necessary. The Navy would continue to implement a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. The relevant contingency and spill plans would be updated, and the modifications implemented accordingly.

Project construction and operations conducted in accordance with these plans would minimize risks associated with potential spills or releases of, and potential exposures of humans to, hazardous materials. Therefore, impacts from Alternative 1 related to hazardous materials would be less than significant.

Hazardous Waste Management

Construction and renovation activities associated with Alternative 1 would generate hazardous wastes, such as spent solvents, waste paint, spent fluorescent bulbs, used oil, spill cleanup materials, and spent lead-acid batteries. Construction and demolition debris generated by renovation and demolition would be characterized prior to disposal. All hazardous wastes generated would be managed in accordance with the Commander, Navy Region Southwest Waste Management Plan for the San Diego Metro Area as well as applicable federal, state, and local regulations.

During post-construction operations, hazardous waste management at OTC would be in accordance with the Commander, Navy Region Southwest Waste Management Plan for the San Diego Metro Area as well as applicable federal, state, and local regulations. The Resource Conservation and Recovery Act generator status of the three hazardous waste generating activities would not change. Hazardous waste streams would also be expected to remain the same. Where needed, new satellite hazardous waste accumulation areas and/or 90-day storage areas would be established. These sites would be managed in accordance with the Commander, Navy Region Southwest Waste Management Plan for the San Diego Metro Area as well as applicable federal, state, and local regulations.

Hazardous wastes generated during the construction and operations phases of Alternative 1 and managed in accordance with the Waste Management Plan and applicable regulations would not result in increased risks of contaminant releases or exposure of humans. Therefore, the implementation of Alternative 1 would result in less than significant impacts with regard to hazardous wastes.

Special Hazards

Special hazards wastes would be generated during renovation and demolition activities under Alternative 1. Wastes would likely include some of the residual asbestos-containing materials, lead-based paint, PCBs, and mercury-containing devices (e.g., old switches, thermostats). While some of these waste types were removed during previous renovation actions at OTC, some presently unknown amount remains and could be encountered during Alternative 1 renovation activities. Prior to the start of renovation or demolition, appropriate surveys would be conducted to determine the presence of such materials, and a hazardous materials abatement plan would be developed and employed to abate asbestos, lead-based paint, and other special hazard materials. The State of California would be notified prior to removal actions, and only California-licensed contractors certified for special hazards abatement would be hired to perform the work. Demolition of structures known to contain special hazards would be conducted in accordance with applicable regulations and would include the use of personal protective equipment, as appropriate. Proper handling and disposal of any resulting wastes would be conducted in accordance with federal and state regulations, including Resource Conservation and Recovery Act, Toxic Substances Control Act, Occupational Safety and Health Act, National Emission Standards for HAPs (in the case of asbestos), and California Code of Regulations. Furthermore, these wastes would be accompanied by a waste manifest when transported offsite for disposal at an approved facility.

During the operations phase of the project, these specials hazards would not be present at the site and would no longer pose a risk to personnel working at or visiting OTC.

With proper protocols and in accordance with applicable regulations, handling and disposal of special wastes would not result in contaminant releases or exposures of humans to harmful substances. For these reasons, the implementation of Alternative 1 would result in less than significant impacts related to special hazards.

Contaminated Sites

As discussed in Section 3.7.2.4, nine IR sites are present at OTC Site 1. The status of these sites ranges from “closed” to “undergoing active remediation.” The regulatory status of closed sites also varies. For additional information on the status of the IR sites, see Section 3.7.2.4.

Based on the results of ongoing remedial and site assessment activities (and recommended future assessments in the case of poly-fluoroalkyl substances), the proposed redevelopment activities associated with Alternative 1 would likely result in one of the following outcomes for each of the IR sites: (1) may proceed without the need for any further action; (2) may proceed with land use controls in place; and (3) may require additional cleanup depending on the proposed future land use type. Land uses are categorized based on the assumed length, duration, and magnitude of potential human exposure. Alternative 1 would limit the redevelopment of the property to commercial or industrial land uses. This land-use category assumes that only working-age adults would be present at the site on a regular basis. Contaminant exposure assumptions and cleanup requirements for establishing site closure are typically less conservative for commercial or industrial uses than for more sensitive uses, such as residences, schools, or hospitals.

As discussed in Section 3.7.2.4, the Navy has developed interim land use controls for IR Sites 1, 2, 3, 4, 5, 7, 11, 12, and 13. Land use controls "run with the property," meaning a land use control and its provisions are binding on all current and future property owners and users. Land use controls are subject to annual inspections and reporting to ensure ongoing compliance. Land use controls require review every 5 years in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act. A land use control remains in effect until it is formally removed or modified by the regulatory agency. The regulatory agency reviews applications and information supporting a land use control termination or variance. For example, if a new owner completes additional cleanup to remove or otherwise remediate contamination, the agency could go through the process requesting termination of the land use control.

The establishment of land use controls would be accomplished in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act ROD process and in coordination with regulatory agencies and with the public. Additionally, proposed redevelopment activities under Alternative 1, including ensuring proposed land uses are compatible with existing site conditions and land use controls, would follow the same coordination process with the agencies and the public.

Also, as discussed in the February 2020 Environmental Condition of Property report (see Section 3.7.2.4), there is an existing VOC contaminant groundwater plume that originated offsite but has the potential to migrate onto the southern boundary of OTC in the future. The extent of this plume has not been characterized in detail. Navy development activities on the southern portion of OTC Site 1 would need to be coordinated with the San Diego Regional Water Quality Control Board and the California Department of Toxic Substances Control to ensure that these would be compatible with subsurface conditions in this area.

With continued adherence to established processes and procedures for managing IR sites, and based on the other factors discussed above, Alternative 1 would result in less than significant impacts to human health and safety with regard to hazardous materials management, hazardous waste management, special hazards and contaminated sites.

3.7.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

As described below, the types of impacts related to hazardous materials and wastes, special hazards, and contaminated sites under Alternative 2 would be similar to those described for Alternative 1. However, under Alternative 2, all existing OTC buildings would be demolished, and new construction would occur on both OTC Site 1 and OTC Site 2. This would potentially result in comparatively larger volumes of hazardous wastes and special hazards, along with a greater potential for encountering contaminated soils and groundwater during construction.

Hazardous Materials Management

Standard demolition and construction methods are well regulated and limit, to the extent possible, hazardous materials, including fuels, paints, adhesives, and solvent, that would be used and/or stored onsite to support demolition and construction activities under Alternative 2. All such materials would be handled in accordance with BMPs implemented by the construction contractor along with spill prevention protocols. BMPs would include storing hazardous materials in appropriate containers and storage lockers and employing secondary containment as necessary to limit the risk and impact of any potential spills. The aboveground storage tanks disassembled and removed, and their contents properly disposed of in accordance with all federal and state regulations, including being properly defueled, triple rinsed, and the materials properly disposed of at an offsite recycling or other designated facility. Any emergency generators required in the new facilities would have new aboveground storage tanks that would conform with all requirements and would be added to any contingency or spill plans.

In the post-construction operational phase of the project, hazardous materials at OTC would continue to be managed in accordance with all applicable policies, laws, and regulations. With the relocation of 645,187 square feet of office, laboratory, warehouse, storage and open space laydown, there would be an overall reduction in the operational use of hazardous materials for electronics maintenance, painting, and blasting. Otherwise, the types, quantities, and applications of hazardous materials required by NAVWAR at OTC would be similar to existing conditions. All current legally compliant management policies and practices would continue to be implemented. The relevant contingency and spill plans would also be updated, and any required modifications to such plans would be implemented as well.

Residential, hotel, office, and retail functions planned under this alternative would also store and use various types of hazardous materials, such as paints and solvents. The management of these hazardous materials would be the responsibility of each tenant as specified in the public-private development agreement but can reasonably be expected to be fully compliant with all relevant laws and regulations.

Alternative 2 construction and operations conducted in accordance with applicable plans and regulations would minimize risks associated with potential spills or releases of, and potential exposures of humans to, hazardous materials. Therefore, impacts from Alternative 2 related to hazardous materials would be less than significant.

Hazardous Waste Management

Hazardous wastes generated during Alternative 2 demolition and construction activities would likely include spent solvents, waste paint, fluorescent bulbs, used oil, spill cleanup materials, and lead-acid batteries. The volumes of wastes that would be generated and require disposal are not known at this time; however, prior to renovation or demolition, a hazardous materials abatement plan would be developed. Construction and demolition debris would be characterized prior to disposal. All hazardous wastes generated would be managed in accordance with the Commander, Navy Region Southwest Waste Management Plan for the San Diego Metro Area as well as applicable federal, state, and local regulations.

Post-demolition and post-construction NAVWAR hazardous waste management at OTC would be similar to current management practices. The Resource Conservation and Reclamation Act generator status for each of the three hazardous waste generators may change (see Section 3.7.2.2). Hazardous waste streams associated with the NAVWAR operations that would be moved to a different location would be reduced on OTC. Where needed, new satellite hazardous waste accumulation areas and/or 90-day storage areas would be established. These areas would be managed in accordance with the Commander, Navy Region Southwest Waste Management Plan for the San Diego Metro Area as well as applicable federal, state, and local regulations.

Hazardous wastes would likely be generated by tenant organizations. The specific nature and volume of the tenant waste streams are not known but would be expected to consist of waste building maintenance materials (e.g., waste paints, sealants). Public-private development agreements would require the proper management of hazardous wastes by tenant organizations. Depending on generation rates, tenants may need to obtain USEPA hazardous waste generator/handler identification numbers and other permits.

Hazardous wastes generated during the construction and operations phases of Alternative 2 and managed in accordance with the Waste Management Plan and applicable regulations would not result in increased risks of contaminant releases or exposure of humans. Based on these considerations, the implementation of Alternative 2 would result in less than significant impacts with respect to hazardous waste management.

Special Hazards

Special hazards wastes, including asbestos-containing materials, lead-based paint, PCBs, and mercury-containing devices (e.g., old switches, thermostats), would also be generated during the Alternative 2 demolition activities. Due to their age (all built in 1942), Buildings 1, 2, 3, 4, 7, 8, 27, 28, 30, 32, and 34 are presumed to contain asbestos-containing material, PCB containing materials, and lead-based paint. The quantities of these materials currently present in or on the buildings are not known. Prior to demolition of buildings, a hazardous materials abatement plan would be developed and employed to abate asbestos, lead-based paint, and other materials. Demolition of structures known to contain special hazards would be conducted in accordance with applicable regulations and would include the use of personal protective equipment, as appropriate. Proper handling and disposal of any resulting wastes would be conducted in accordance with federal and state regulations, including Resource Conservation and Recovery Act, Toxic Substances Control Act, Occupational Safety and Health Act, National Emission Standards for HAPs (in the case of asbestos), and California Code of Regulations. Furthermore, special wastes would be accompanied by a waste manifest when transported offsite for disposal at an approved facility. During the operations phase of Alternative 2, specials hazards would not be present at the site and would no longer pose a risk to personnel working at or visiting OTC. With proper protocols in accordance with applicable regulations, handling and disposal of special wastes would not result in contaminant releases or exposures of humans to harmful substances. For these reasons, the implementation of Alternative 2 would result in less than significant impacts related to special hazards.

Contaminated Sites

As discussed in Section 3.7.2.4, nine IR sites are present at OTC Site 1. The status of these sites ranges from “closed” to “undergoing active remediation.” The regulatory status of closed sites also varies.

In addition to commercial or industrial land uses, redevelopment of OTC under Alternative 2 would include residential uses. Land use controls are allowed for areas classified for use as residential. Consequently, exposure assumptions and cleanup requirements related to site conditions are more conservative for the residential land-use scenario than assumptions applied in commercial or industrial use scenarios.

As discussed for Alternative 1, future efforts for Alternative 2 would include remedial and site assessment activities for identified IR sites and for potentially contaminated sites not yet fully investigated or characterized (as in the case of poly-fluoroalkyl substances). Based on the results of these activities, proposed residential development could be limited to OTC areas where no contaminant releases have been identified, where IR sites have received site closure status, or where there is no complete risk exposure pathway. Development could occur in areas where LUCs apply with variances approved by regulatory agencies and the Navy. These factors would be considered in the development planning phase. As with Alternative 1, the Navy would accomplish all development planning for Alternative 2 in coordination with future developers, regulatory agencies, and with the public (through the Comprehensive Environmental Response, Compensation, and Liability Act process described in Section 3.7.3.2).

Implementation of Alternative 2 would result in less than significant impacts to human health and safety from hazardous materials management, hazardous waste management, special hazards and previously contaminated sites IR sites because IR sites would be remediated to levels appropriate for intended future use (i.e., residential, commercial, or industrial).

3.7.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Hazardous Materials, Hazardous Wastes, and Special Wastes

Impacts related to hazardous materials, hazardous wastes, and special wastes under Alternative 3 would be similar to those described for Alternative 2. It would be likely that due to the comparatively lower density of residential, hotel, office, and retail functions there would be less hazardous materials and resultant hazardous wastes when compared to Alternative 2 for those functions. Use and storage of hazardous materials, and waste generation from Navy functions would be the same as those described for Alternative 2.

Similar to Alternative 2, under Alternative 3 hazardous materials, hazardous wastes, and special wastes would be handled, stored, and disposed of in accordance with applicable plans and regulations designed to minimize environmental risks from accidental releases and risks of exposures to humans. Therefore, implementation of this alternative would result in less than significant impacts to hazardous materials and wastes, and special wastes.

Contaminated Sites

No impacts would be associated with IR sites for Alternative 3 that have not already been addressed under Alternative 2. Therefore, implementation of Alternative 3 would result in less than significant impacts to human health and safety with regard to previously contaminated sites.

3.7.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with Transit Center

Hazardous Materials, Hazardous Wastes, and Special Wastes

Impacts related to hazardous materials, hazardous wastes, and special wastes under Alternative 4 would be similar to those described for Alternative 2, with the exception that the addition of a transit center would potentially add new hazardous materials and hazardous waste streams to OTC. These hazardous materials and wastes would potentially consist of materials associated with vehicle maintenance such as lubricants, solvents, antifreeze, etc. These materials and the wastes generated from their use would be managed by the San Diego MTS, which has policies and procedures for the management of hazardous materials and wastes. It would be likely that, due to the slightly lower density of residential, hotel, office, and retail functions there would be less hazardous materials and resultant hazardous wastes generated when compared to Alternative 2 for those private functions. Use and storage of hazardous materials, and waste generation from Navy functions would be the same as those described for Alternative 2.

Similar to Alternative 2, under Alternative 4 hazardous materials, hazardous wastes, and special wastes would be handled, stored, and disposed of in accordance with applicable plans and regulations designed to minimize environmental risks from accidental releases and risks of exposures to humans. Therefore, implementation of Alternative 4 would result in less than significant impacts with respect to hazardous materials and wastes, and special wastes.

Contaminated Sites

There are no impacts associated with IR sites for Alternative 4 that have not already been addressed under Alternative 2. Implementation of Alternative 4 would result in less than significant impacts to human health and safety with regard to previously contaminated sites.

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

Hazardous Materials, Hazardous Wastes, and Special Wastes

Impacts related to hazardous materials, hazardous wastes, and special wastes under Alternative 5 would be similar to those described for Alternative 4. It would be likely that, due to the slightly lower density of residential, hotel, office, and retail functions there would be lesser quantities of hazardous materials and resultant hazardous wastes generated when compared to Alternative 4 for these private functions. Impacts from Navy functions would be the same as those described for Alternative 4.

Similar to Alternative 2, under Alternative 5 hazardous materials, hazardous wastes, and special wastes would be handled, stored, and disposed of in accordance with applicable plans and regulations designed to minimize environmental risks from accidental releases and risks of exposures to humans. Therefore, the implementation of Alternative 5 would result in less than significant impacts with respect to hazardous materials and wastes, and special wastes.

Contaminated Sites

No impacts would be associated with IR sites for Alternative 5 that have not already been addressed under Alternative 2. Implementation of Alternative 5 would result in less than significant impacts to human health and safety with regard to previously contaminated sites.

3.7.3.7 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No potential mitigation measures would be warranted for hazardous materials and wastes based on the analysis presented in Section 3.7.3.

Proposed Management Practices

- HAZ MGMT-1. Hazardous materials would be identified and remediated in compliance with all applicable regulations prior to demolition or renovation. Compliance with regulations would be included in any construction, demolition, or renovation contract language.
- HAZ MGMT-2. IR sites would continue to be managed under the IR Program coordinated with the San Diego Regional Water Quality Control Board and the California Department of Toxic Substances Control. These agencies would require that existing site conditions (e.g., uncontained sites, sites with land use controls) be compatible with proposed future land uses for the site.

Potential Monitoring Measures

- HAZ MON-1. The Navy Officer in Charge of Construction would monitor and confirm that contractors conducting work are complying with all applicable regulations regarding the identification, remediation, handling, and disposal of hazardous materials and wastes through regular inspection of documents and work sites.

3.7.3.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be less than significant impacts regarding hazardous materials and wastes from implementation of the No Action Alternative, Alternative 1, Alternative 2, Alternative 3, Alternative 4, and Alternative 5.

3.8 Public Health and Safety

Public health and safety refers to any activities, occurrences, or operations that have the potential to affect the safety, well-being, or health of persons or communities. The main objective is to identify and prevent potential accidents or impacts to the general public. This section of the EIS addresses the construction activities and operations associated with the Proposed Action Alternatives, and their potential health and safety risks. Risks to public health and safety during construction activities are associated with the co-occupation of the construction area by people along with heavy machinery and equipment, construction traffic, falling hazards, hazardous materials, and utility lines. Risks to public health and safety during the operational phase are generally associated with environmental exposure of persons or communities to potential hazards and safety and security of facilities. Receptors with higher sensitivity to potential public health and safety impacts include areas where large groups of people and children may gather, such as schools, recreational areas, parks, and residential areas.

The public health and safety assessment addresses effects that are not entirely contained on OTC, as well as activities that can take place in areas of public use. Therefore, the ROI for public health and safety includes OTC and immediately adjacent properties that could be affected by more mobile resources (e.g., HAPs or noise). The ROI includes residential areas where people are present at all times of the day and night, as well as areas where large groups of people may gather such as commercial areas, parks (e.g., Old Town State Park), and the Old Town Transit Center.

Several resource areas analyzed in this EIS are relevant for the analysis of public health and safety. This section integrates summary information from those resources and provides a determination of potential impacts based on that information. The resource areas integrated into the public health and safety analysis are listed below along with the corresponding EIS section number for the detailed analysis related to each resource:

- emergency services (Section 3.10)
- air quality (Section 3.1)
- airspace (Section 3.12)
- electromagnetic radiation
- geologic hazards (Section 3.14)
- hazardous materials and wastes (Section 3.7)
- noise (Section 3.13)
- wildfire (Appendix A)
- antiterrorism and force protection

3.8.1 Regulatory Setting

The majority of laws, regulations, and policies associated with public health and safety are captured within the regulatory setting sub header of each individual resource area analyzed in this EIS and are not repeated here. Laws, regulations, and policies associated with public health and safety that are not captured in previous resource area sections include:

- SECNAVINST 5510.30B, Navy Personnel Security Program
- SECNAV M-5510.36A, Navy Information Security Program
- DoD 5220.22-M, National Industrial Security Program Operating Manual
- DoD 6055.06, Fire and Emergency Services
- Office of the Chief of Naval Operations Instruction (OPNAVINST) 5100.23G, Navy Safety and Occupational Health Program Manual
- OPNAVINST 5530.14E, Navy Physical Security and Law Enforcement Program

3.8.2 Affected Environment

This section describes the existing conditions for emergency services, safety requirements and practices, and hazards overview at OTC.

3.8.2.1 Emergency Services

The three main emergency service functions are police/security, fire and rescue, and emergency medical service. The Naval Base Point Loma fire department provides fire suppression, fire prevention, emergency medical aid, and hazardous materials response to OTC. Naval Base Point Loma Force Protection personnel provide security measures for the protection of facilities, equipment, and personnel. Force Protection verifies the authorization of all personnel and vehicles entering OTC. The Office of Emergency Management provides emergency response training for Naval Base Point Loma. The installation Office of Emergency Management coordinates with the Region Office of Emergency Management, Naval Base Point Loma security, Navy fire department, medical agencies, and other federal, state, and local agencies to prepare for and mitigate threats or natural disasters that might affect infrastructure or personnel at OTC. Emergency services for areas outside of the NAVWAR portion of OTC would be provided by the City of San Diego (Alternatives 2 through 5).

3.8.2.2 Current Safety Requirements and Practices

OTC has a variety of safety measures and procedures in place to control access to the site and ensure public health and safety. Safety measures include a fence around the perimeter of the facility, restricting unauthorized access to the facility and further restricting access to controlled areas within the facility, controlled facility access points, and security guards (NAVFAC Southwest, 2012). A key safety procedure at OTC is the Emergency Response Action Plan, also known as the “Red Plan.” The Red Plan provides specific instructions for initial oil or hazardous substance response actions, including response action flow charts, notification (essential communication) protocols, protection action prioritization, strategies, cleanup procedures, and documentation.

OTC facilities include older buildings that require major renovations. The existing facilities expose occupants to interior moisture during precipitation events, bird and rodent intrusion, and exposure to industrial noise and limited-to-no climate control. Older buildings have a greater risk associated with falling glass and actively deteriorating asbestos-containing materials (NAVFAC Southwest, 2020).

3.8.2.3 Hazards Overview

Below is a list of hazards relevant for the analysis of public health and safety. Each item listed below is followed by a brief description of the potential hazard and a statement of the existing status as a potential hazard at OTC.

Air Quality

Operation of OTC produces direct criteria air pollutant and GHG emissions from a variety of sources. However, OTC is not currently a significant contributor to air quality nonattainment within the SDAB. The air quality components relevant to public health and safety are CO hot spots and HAPs. See Section 3.1 Air Quality for more information.

Airspace

The airspace over OTC is important for directing general aviation aircraft visual flight rules departures away from San Diego International Airport to create separation time for faster commercial jets. There are also two 14 CFR 77 Approach Clearance Surfaces over OTC; one for the San Diego International Airport (beginning at 166 feet above mean sea level), and another for Naval Air Station North Island (as low as 280 feet mean sea level). Additionally, there is a Terminal Instrument Procedures surface for lateral navigation approaches over OTC (as low as 345 feet above mean sea level). Finally, the airspace over OTC is occasionally used by helicopters departing or arriving at San Diego International Airport. Existing building heights at OTC are not a hazard to air traffic navigation (Airport Land Use Commission, 2014). See Section 3.12 Airspace for more information.

Electromagnetic Radiation

An electromagnetic radiation hazard exists when transmitting equipment generates electromagnetic fields that induce currents strong enough to interrupt or trigger the function of other electronic devices, or directly harm people or wildlife. OTC has electronic systems with the potential to emit energy waves that, in very high intensities, can disrupt other electronic systems or be a health hazard. Radar, electronic warfare devices, navigational aids, two-way radios, cell phones, radio transmitters, and other communications and electronic devices produce electromagnetic radiation. Transmitting antennas emit radiation as radio waves and microwaves. Existing antenna systems are electromagnetically capable and have the potential to present electromagnetic radiation hazards. Exposure to radio frequency energy of sufficient intensity at frequencies between 3 kilohertz and 300 gigahertz can adversely affect people, munitions, or fuel (Navy, 2011b).

OTC currently utilizes antenna platforms for communication with ground (line-of-sight) and satellite receptors. Satellite communication antennas at OTC have high gain/radiation in the direction of the satellite and little signal elsewhere. Line-of-sight antennas radiate at a lower power but are more likely to cause electromagnetic interference due to omnidirectional radiation characteristics. High power systems can pose a hazard to personnel nearby, but antenna equipment on OTC is highly unlikely to pose a radiation hazard to personnel not on the antenna platform itself (NAVWAR, 2020a).

Maintaining height restrictions of buildings or structures surrounding OTC is critical to ensure successful operation of antennas. Surrounding buildings below 180 feet tall are clear of the radiation beams from the antenna platforms at any distance from it. However, buildings taller than 180 feet may be in the radiation path depending on their proximity to the antenna platform. Satellites at the limit of view from San Diego to the southwest and southeast pose the greatest risk to obstruction as the antenna pointing angle for each of those directions is lowest in the sky. The specific areas to the southwest and southeast, respectively, that will need to be kept clear of obstructions include the former Main San Diego post office site bounded by Midway Drive to the northeast and Barnett Avenue on the southeast, and an adjacent triangle-shaped parcel bounded by Midway Drive, Enterprise Street, and Jessop Lane (NAVWAR, 2020a). The buildings that currently occupy those locations do not interfere with antenna signals from OTC.

Antenna platforms are placed to minimize potential effects to workplace safety and public health and safety, while optimizing performance. In-depth studies of both electromagnetic interference and radiation hazards are conducted to determine proper and safe placement of antenna systems. Studies of potential electromagnetic interference and radiation hazards associated with the redevelopment at OTC have yet to determined (NAVWAR, 2020b). DoD standard operating procedures are to avoid excessive exposures of electromagnetic energy between electromagnetic energy emitters and people, munitions, and fuels (Navy, 2011b). Operations at OTC purposely avoid broad conflict with civilian systems. The Navy, Naval Base Point Loma, and OTC staff coordinate with infrastructure providers and spectrum users to avoid public health and safety effects and spectrum conflicts.

Geologic Hazards

OTC is located in an area that is vulnerable to ground movement and liquefaction (Figure 3.8-1). Standard seismic engineering design is used to minimize potential effects of seismically-induced ground movement such as severe shaking, lateral spreading, slope failure, or liquefaction.

However, OTC contains numerous buildings that were designed before modern seismic engineering practices were adopted. These older structures are currently lacking in appropriate seismic design and retrofit. See Section 3.14 Geological Resources for more information

Hazardous Materials and Wastes and Installation Restoration Program

OTC has a history of hazardous materials and hazardous waste handling, special hazards (e.g., lead-based paint, asbestos-containing materials, and PCBs) and contaminated sites. Interim land use controls have been proposed for implementation where it has been determined that it is safe to leave specific types and concentrations of contamination at a property based on current and projected land use.

Existing hazardous materials, hazardous waste, and special hazards are managed according to strict local, state, federal, and Navy regulations to ensure safe handling. See Section 3.7 Hazardous Materials and Wastes for more information.

Noise

The primary effect of loud noise on people is annoyance. However, health effects from noise can also include sleep disturbance, elevated blood pressure, elevated stress hormone levels, and hearing loss. The most significant contributors to noise at OTC are airplanes from San Diego International Airport and cars from Interstate 5. OTC, like other nearby businesses, produces sounds consistent with background industrial noise but is not considered a significant contributor to the surrounding airplane and automobile-dominated noise environment. Current noise levels at OTC are consistent with local compatible use guidelines for the area and are not considered a health hazard to OTC employees. See Section 3.13 Noise for more information.

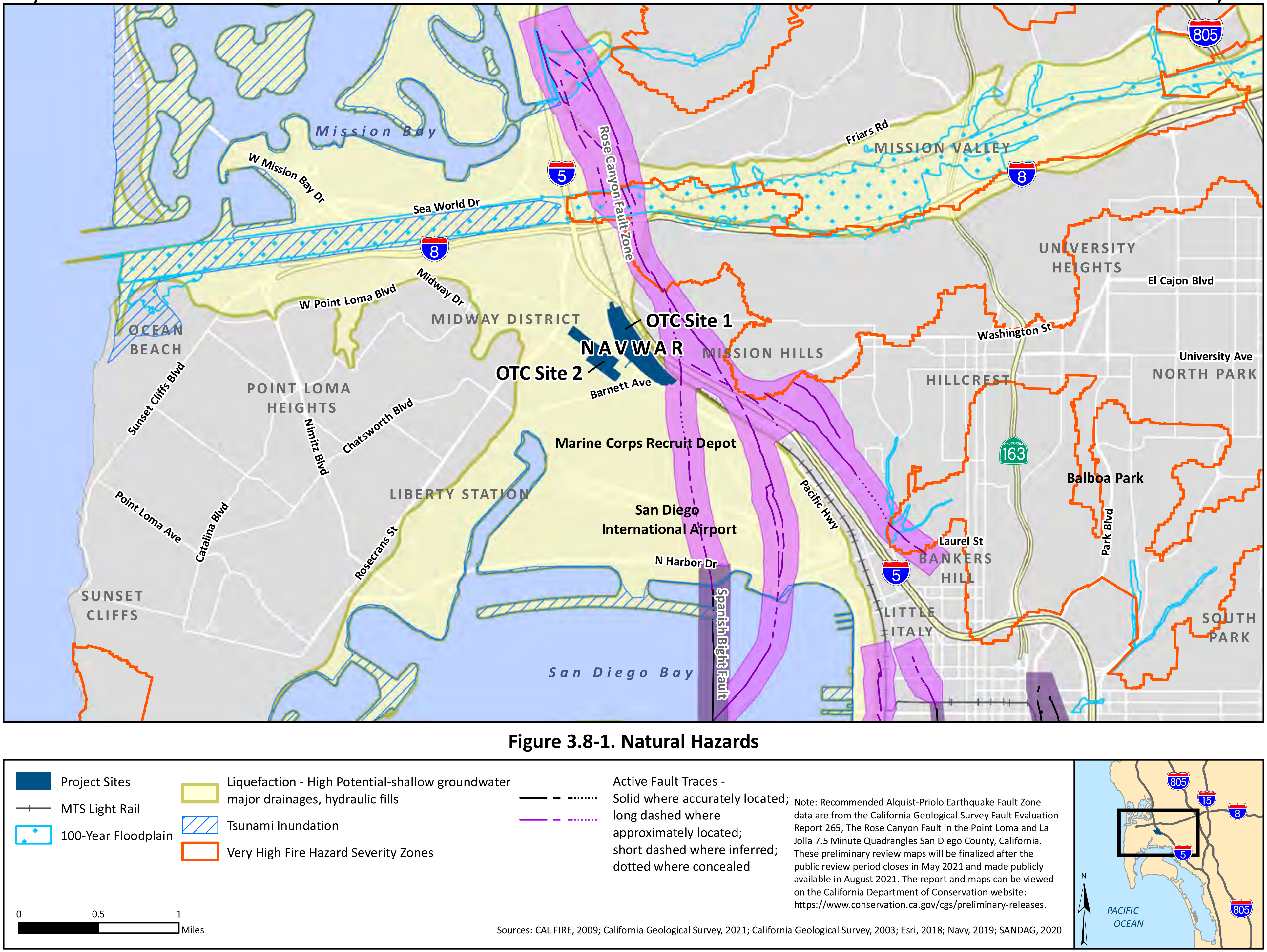


Figure 3.8-1. Natural Hazards

Note: Recommended Alquist-Priolo Earthquake Fault Zone data are from the California Geological Survey Fault Evaluation Report 265, The Rose Canyon Fault in the Point Loma and La Jolla 7.5 Minute Quadrangles San Diego County, California. These preliminary review maps will be finalized after the public review period closes in May 2021 and made publicly available in August 2021. The report and maps can be viewed on the California Department of Conservation website: https://www.conservation.ca.gov/cgs/preliminary-releases.

Sources: CAL FIRE, 2009; California Geological Survey, 2021; California Geological Survey, 2003; Esri, 2018; Navy, 2019; SANDAG, 2020

Wildfire

Wildfire potential is addressed in the CEQA analysis in Appendix A; affected environment information is presented here as the basis for that analysis. A portion of San Diego County is designated by the California Department of Forestry and Fire Protection as being within either a "High" or "Very High" Fire Hazard Severity Zone (California Department of Forestry and Fire Protection, 2020). OTC is located in a highly urbanized area. However, there are undeveloped corridors of thick vegetation designated as a Very High Fire Hazard Severity Zone within one mile of OTC facility (e.g., along the San Diego River), as shown on Figure 3.8-1 (California Department of Forestry and Fire Protection, 2020). There are no records of a wildland fire reaching OTC or adjacent properties in at least the past 150 years (Wildfire Today, 2019; City of San Diego, 2020a).

Security and Force Protection

The commands charged with ensuring the security and safety of OTC are the Commander, Navy Region Southwest Security Management Program and the Commander, Navy Region Southwest Public Safety Force Protection, referred to hereafter as the Security Management Program and Public Safety Force Protection. Public Safety Force Protection's mission is to deter, detect, and defend the installation's personnel and assets against hostile actions. This is accomplished through the effective integration of antiterrorism, physical security, law enforcement, and installation access. Force Protection Design standards consist of restrictions for onsite planning, including stand-off distances, building separation, unobstructed space, drive-up and drop-off areas, access roads, and parking; structural design; structural isolation; and electrical and mechanical design guidance requires specific setbacks to minimize impacts on personnel and facilities in the event of a terrorist attack. These guidelines include a 148-foot setback between the station perimeter and high-occupancy buildings and an 82-foot setback between station parking areas or roads and high-occupancy buildings (NAVFAC Southwest, 2012).

In January 2009, the Navy revised guidance for the Navy Physical Security and Law Enforcement Program (OPNAVINST 5530.14E). The revised policy states the "objective of the Navy Security Program is to safeguard personnel, property, facilities and materiel and to enforce laws, rules, and regulations at Navy installations, activities, and operational commands." To ensure physical security at Navy installations, the instructions require installations to (Navy, 2009)[11]:

- conduct daily security checks
- conduct physical security surveys annually
- conduct security inspections for all critical areas at least every 2 years
- conduct a vulnerability assessment of all facilities and other activities annually
- conduct threat assessments through coordination with local, state, and other federal agencies
- establish a risk management process
- develop an education program on security
- maintain an external entry and restricted area access control program to ensure security to and from the installation
- employ barriers and patrols to ensure boundaries are protected

[11] Requirements in OPNAVINST 5530.14E that are not applicable to OTC are not included in this list.

Although current security measures are functional at OTC, they do not meet the latest design guidance for safety, security, and force protection (e.g., the current configuration of the facility lacks adequate setbacks from the public sidewalk and roadway). Additionally, there is insufficient space for truck inspection and circulation, which can cause congestion at the front gate and reduce security check and gate entry efficiency. Improvements in structural design at OTC are needed to fully achieve Force Protection Design standards.

3.8.3 Environmental Consequences

This public health and safety analysis focuses on the proposed construction and operational potential for environmental consequences to health, safety, and security of military personnel and civilians working or living within OTC, and the general public occupying or inhabiting areas adjacent to OTC. Factors considered in determining the potential significance of each alternative's impacts on public health and safety include safety history, facility access control, activity schedule (e.g., construction times of day/days of the week), frequency, duration, intensity, operational control of potentially hazardous activities or materials, proximity of receptors, the probability of contact with a potentially hazardous activity or material, and the degree to which such activities or materials would affect public health and safety.

The likelihood that receptors (e.g., persons or communities) would be near a hazardous or hazard-inducing activity determines the potential for exposure. If the potential for exposure exists, then the degree of the potential effects on public health and safety, including increased risk of injury or loss of life, is analyzed. If the potential for exposure were zero, then public health and safety would not be affected. Hazardous activities occurring in a controlled environment on Navy property, where a substantial buffer exists between the activity and adjacent receptors, are deemed not to be a risk to public safety.

3.8.3.1 No Action Alternative

Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities as described in Section 2.3.2, and there would be no change to existing public health and safety conditions at OTC. Operations at OTC would continue in the existing buildings without major renovations, and the buildings would not be updated to more modern seismic safety standards. The existing facilities would continue to expose occupants to interior moisture during precipitation events, bird and rodent intrusion, exposure to industrial noise and limited-to-no climate control, falling glass, and actively deteriorating asbestos-containing materials. No changes would occur to electromagnetic radiation-emitting activities. Navy standard operating procedures regarding electromagnetic radiation safety and non-interference would continue to be enforced. Under the No Action Alternative, operations would continue without adequate safety-security setbacks from the facility fence line, and traffic would continue to be susceptible to vehicle back-ups at the entry gate and on the public surface streets that approach the facility entry. This would affect the safety and security of OTC workers and approved visitors; however, this would not affect public health and safety of population outside of OTC. Therefore, the No Action Alternative would have less than significant impacts to public health and safety.

3.8.3.2 Alternative 1: NAVWAR-Only Redevelopment

Under Alternative 1, the impacts to public health and safety resources associated with construction, repair, renovation, and/or demolition would include hazards from overhead (falling debris, suspended objects or object movers) and underfoot (excavation, trenching, tripping, in-ground hazardous substances), airborne (dust, noise), and traffic. These types of hazards are typical of most construction sites and would be addressed in a construction site safety plan, and through implementation of standard Occupational Safety and Health Administration and local safety construction guidelines. Outside of the construction site, the ROI is completely developed and occurs in a heavily trafficked, noisy, urban setting that has experienced and will continue to experience other community and property construction projects. Operations under Alternative 1 would be similar to current operations at OTC but would occur in a modern facility that would have positive impacts on health, safety, and security.

Emergency Services

Under Alternative 1, the sources of emergency services would remain the same. However, emergency response times and access have the potential to improve as a result of redesigned vehicle and pedestrian circulation at the facility. The three large former hangars (Buildings 1, 2, and 3) would be reduced to two (Buildings 2 and 3), which would consolidate activities and personnel, thereby allowing a more focused response in the event of an emergency. Therefore, implementation of Alternative 1 would have less than significant impacts on the emergency services aspect of public health and safety.

Potential Hazards

Air Quality

Under Alternative 1, construction activities would temporarily contribute to increased air emissions. However, emissions would be reduced with the use of construction BMPs. Alternative 1 construction and operations would result in less than significant impacts to CO hot spots and HAPs. Emissions of HAPs from the construction of Alternative 1 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs (refer to Appendix D, Attachment A). Therefore, Alternative 1 would have less than significant impacts to the air quality aspect of public health and safety.

Airspace

Prior to the start of construction on OTC, a Notice of Proposed Construction or Alteration (Form 7460-1) would be filed with the FAA for all proposed objects (antennas, trees, mobile objects, and temporary objects such as construction cranes) taller than 150 feet. Aircraft safety during the construction phase would be achieved through a combination of FAA review and approval, along with a Notice to Airmen of potential obstructions in the airspace. Under Alternative 1, the aircraft safety compatibility of OTC would remain the same as current conditions. Building heights would be very similar to the existing conditions, which do not currently constitute an aircraft safety compatibility problem. Potential post-construction hazards to air traffic navigation (such as glare from reflective materials or attracting birds) would be addressed and avoided during the design stage. Therefore, Alternative 1 would have less than significant impacts to the aircraft safety aspect of public health and safety.

Electromagnetic Radiation

Under Alternative 1, electromagnetic radiation-emitting activities would be similar to the existing conditions described for the No Action Alternative. The Navy would continue to follow standard operating procedures regarding electromagnetic radiation safety, including typical electromagnetic interference and radiation hazard procedures and appropriate placement of antenna platforms. The plan to increase setbacks of facility buildings from public space would further increase the distance between electromagnetic radiation emitters and potential obstructions or unintended receptors. As a proposed BMP, any reconfiguration, upgrading, or addition of new equipment would undergo electromagnetic interference and radiation hazards studies prior to implementation. Therefore, Alternative 1 would have less than significant impacts to the electromagnetic radiation hazard potential aspect of public health and safety.

Geologic Hazards

Nearby active and potentially active faults have the potential to impact public health and safety. OTC is in an area that is vulnerable to ground movement and liquefaction. A Faulting, Seismicity, and Geologic Hazards Investigation would need to be conducted to determine whether an active fault is located within OTC. If the investigation identifies an active fault within OTC, a Fault Surface Rupture Displacement Hazard Investigation and a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would also need to be conducted (SANDAG, 2020a). Existing buildings at OTC Site 1 would be renovated under Alternative 1 to meet seismic requirements. Renovations to meet seismic standards would help to minimize potential effects of seismically-induced ground movement such as severe shaking, lateral spreading, slope failure, or liquefaction. Therefore, Alternative 1 would result in less than significant impacts to public health and safety from geologic hazards.

Hazardous Materials and Wastes and Installation Restoration Program

Under Alternative 1, construction activities would temporarily increase the potential for impacts from hazardous materials and wastes to construction personnel. Hazardous materials and hazardous waste handling, special hazards, and contaminated sites would be managed, handled, permitted, mitigated, and/or disposed in a manner that would reduce the potential for human exposure to hazardous substances. The Navy would continue to follow interim land use controls as approved by the regulatory agencies. Whenever applicable during both the construction and operational phases of the project, these measures would include a variety of BMPs, waste minimization measures, proper storage techniques, spill response and stormwater pollution prevention plans, adherence to state, federal, and Navy requirements, and disposal characterization and waste stream routing. Therefore, Alternative 1 would result in less than significant impacts to public health and safety from hazardous materials and wastes.

Noise

Construction activities under Alternative 1 would temporarily elevate noise levels coming from OTC. Construction noise would be sporadic and would cease upon completion of construction activities. The use of standard construction BMPs, such as working only during acceptable daytime hours, would help minimize noise impacts. Operations under Alternative 1 would result in outside ambient noise similar to the existing conditions. Improvements under Alternative 1 include enclosing the buildings and providing environmental control within the interior of the buildings, which would help reduce the amount of outside noise entering the buildings. Therefore, Alternative 1 would result in less than significant impacts to public health and safety from noise.

Security and Force Protection

Security and force protection measures would improve as a result of the facility building layout changes and construction to current force protection standards. These changes would improve vehicle and pedestrian circulation, add a secondary inspection area for vehicles, increase the distance of building setbacks from the fence line, and provide closer parking. Security and force protection during operational activities at OTC would improve over the existing conditions and improve security and force protection. Therefore, Alternative 1 would have beneficial impacts to public health and safety from security and force protection.

Alternative 1 Public Health and Safety Summary

Based on the analyses presented above for the various potential hazards, Alternative 1 would result in less than significant impacts to public health and safety.

3.8.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Under Alternative 2, the intensity, and duration of construction activities would be higher than under Alternative 1. OTC operations under Alternative 2 would be similar to Alternative 1 but would occur in modern structures within a mixed-use (including private) development. Private development would follow all applicable regulations and guidance.

Emergency Services

Under Alternative 2, emergency response resources would be impacted by additional occupants and users, tenant types and higher building heights. The mixed-use (including private) development would transfer some emergency services responsibilities to public providers. According to Section 3.10, *Public Services*, additional police, fire, and first responders would be needed to maintain current levels of service (given additional population growth associated with this action alternative) in the project area. However, the costs associated with additional public service resources would be covered by the additional tax revenues and pertinent development impact fees. In addition, this impact would be somewhat offset by the replacement of the existing older and more hazardous buildings with modern, state-of-the-art buildings that are better equipped to support emergency situations. Therefore, impacts to emergency services would be less than significant.

Potential Hazards

Air Quality

Alternative 2 construction and operations would result in less than significant impacts to CO hot spots and HAPs. Emissions of HAPs from the construction and operation of Alternative 2 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs (refer to Appendix D, Attachment A). Therefore, Alternative 2 would have less than significant impacts to the air quality aspect of public health and safety.

Airspace

FAA approval is required under these regulations to avoid airspace conflicts. FAA approval would only occur if proposed building heights were acceptable to the FAA airspace management for aircraft safety. Assuming FAA approves construction after its review, building heights associated with Alternative 2 would result in less than significant impacts to the airspace aspect of public health and safety.

Electromagnetic Radiation

Under Alternative 2, there would be additional and reconfigured antenna platforms and systems added to the existing ground level antennas, that would be incorporated into OTC communication capabilities. Alternative 2 involves mixed-use development at OTC to include residential and commercial uses. Antenna equipment on OTC is highly unlikely to pose a radiation hazard to personnel not on the antenna platform itself. The Navy would continue to follow standard operating procedures regarding electromagnetic radiation safety, including typical radiation hazards procedures and appropriate placement of antenna platforms. The plan to increase setbacks of facility buildings from public space would further increase the distance between electromagnetic radiation emitters and potential obstructions or unintended receptors. As a proposed management practice (PHS-MGT-4) any reconfiguration, upgrading, or addition of new equipment would undergo electromagnetic interference and radiation hazards studies prior to implementation. Therefore, Alternative 2 would have less than significant impacts to the electromagnetic radiation hazard potential aspect of public health and safety.

Geologic Hazards

Geologic hazards impacts for Alternative 2 would be similar to those described for Alternative 1. Any new construction under Alternative 2 would adhere to required setbacks from any active fault identified during the geotechnical investigation. The Alquist-Priolo Special Studies Zone Act states that no occupied structure shall be built on a trace of a fault that has a well-defined surface expression and is known to be sufficiently active in the Holocene (i.e., within the last 11,700 years). If potentially active faults are identified (with known movement in the Quaternary period, older than 11,700 years) during the geotechnical investigation, a project geologist would recommend setbacks for the planned locations of structures. Therefore, Alternative 2 would result in less than significant impacts to public health and safety from geologic hazards.

Hazardous Materials and Wastes and Installation Restoration Program

Under Alternative 2, the types of impacts related to hazardous materials and wastes, special hazards, and contaminated sites would be similar to those described for Alternative 1. Under Alternative 2 all existing OTC buildings would be demolished and new construction would occur on both OTC Site 1 and OTC Site 2. This would potentially result in comparatively larger volumes of hazardous wastes and special hazards, along with a greater potential for encountering contaminated soils and groundwater during construction. Hazardous materials and hazardous waste handling, special hazards, and contaminated sites would be managed, handled, permitted, mitigated, and/or disposed of in the same manner as under Alternative 1 and would reduce the potential for human exposure to hazardous substances. Proposed residential development would be limited to OTC areas where no contaminant releases have been identified, where IR sites have received site closure status, or where there is no complete risk exposure pathway. These factors would be considered in the development planning phase. The residential, hotel, office, and retail functions planned under this alternative would store and use various types of hazardous materials, such as paints and solvents. The management of these hazardous materials would be the responsibility of each tenant as specified in their public-private partnership agreement and are expected to be fully compliant with all relevant laws and regulations. Therefore, Alternative 2 would result in less than significant impacts to public health and safety from hazardous materials and wastes.

Noise

Implementation of Alternative 2 would have significant impacts to the noise environment. Under Alternative 2, noise impacts from construction, particularly those within 200 feet of OTC, would be significant. Although noise impacts from construction are generally considered to be a temporary impact, the duration of construction in this case (until approximately 2050) would not be considered temporary. During operations under Alternative 2 there would be a substantial increase in noise from current conditions, but this increase would be consistent with the San Diego General Plan and with other noise sources and levels in the downtown urban environment with mixed uses such as residential, commercial, and industrial activities. As a result of the extended construction timeframe, implementation of Alternative 2 would result in significant impacts to the noise aspect of public health and safety.

Security and Force Protection

Under Alternative 2, security and force protection of the NAVWAR portion of OTC would be improved by the updated design of the NAVWAR facilities on OTC. Security and force protection requirements of the NAVWAR portion of OTC would also be negotiated into the design. Security of the private facilities will be provided by the City of San Diego. Therefore, Alternative 2 would have beneficial impacts to public health and safety from security and force protection.

Alternative 2 Public Health and Safety Summary

Based on the analyses presented above for the various potential hazards, Alternative 2 would result in significant impacts for noise on public health and safety.

3.8.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Under Alternative 3, the types of impacts to public health and safety resources associated with construction and demolition would be slightly less than Alternative 2, as the density for the public-private mixed-use development would be reduced.

Emergency Services

Under Alternative 3, potential impacts to emergency services would be the same as described under Alternative 2. Therefore, Alternative 3 would have less than significant impacts to emergency services.

Potential Hazards

Under Alternative 3, potential impacts to public health and safety would be similar to those described under Alternative 2, but slightly less based on the reduced density for mixed-use development. Therefore, Alternative 3 would have significant impacts on public health and safety from noise, and less than significant public health and safety impacts with respect to other potential hazards.

Alternative 3 Public Health and Safety Summary

Based on the analyses presented above for the various potential hazards, Alternative 3 would result in significant impacts for noise on public health and safety.

3.8.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

The potential impacts to public health and safety under Alternative 4 would be similar to those described for Alternative 2, as the type of mixed-use the public-private development would be similar but more dense. The NAVWAR facilities included under Alternative 4 are the same as Alternative 2. Additionally, Alternative 4 also includes the addition of a transit center. The primary difference in analysis of impacts between Alternative 2 and Alternative 4 is potential additional people, traffic (vehicle, transit, and pedestrian), and security challenges added by the operation of the transit center on OTC.

Emergency Services

Alternative 4 is the highest intensity development and would have the greatest demand on emergency services. Emergency response resources would be impacted by additional occupants and users, tenant types, and taller building heights. Similar to Alternative 2, additional police, fire, and first responders would be needed to maintain current levels of service (given additional population growth associated with the Proposed Action Alternatives) in the project area. However, the costs associated with additional public service resources would be covered by the additional tax revenues and pertinent development impact fees. Therefore, impacts to emergency services would be less than significant.

Potential Hazards

Air Quality

Construction of Alternative 4 would have the greatest impact to air quality because it involves the highest intensity of development. Under Alternative 4 operations, the transit center would accommodate heavy rail and vehicle drop-offs. However, it would be anchored by an alternative energy (electric) trolley system and zero emissions buses that would not contribute significantly to air quality impacts. Additionally, transit center vehicle trips are not applicable to the NEPA analysis of this alternative. Emissions of HAPs emissions from the construction and operation of Alternative 4 would remain well below the significance threshold of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs (refer to Appendix D, Attachment A). Therefore, impacts to Air Quality would be less than significant.

Airspace

Although building heights under Alternative 4 would be taller than they would under Alternative 2, aircraft safety compatibility impacts to public health and safety would be similar to those described under Alternative 2.

Electromagnetic Radiation

The potential for impacts from electromagnetic radiation under Alternative 4 are generally the same as those described under Alternative 2. The potential exists for electromagnetic radiation to reach additional receptors, as the transit center would bring more people in proximity to the NAVWAR facilities on OTC. However, surrounding buildings below 180 feet tall are clear of the radiation beams from the antenna platforms at any distance from it, and antenna equipment on OTC is highly unlikely to pose a radiation hazard to personnel not on the antenna platform itself. Therefore, Alternative 4 would have less than significant impacts to the electromagnetic radiation hazard potential aspect of public health and safety.

Geologic Hazards

The potential for impacts from geologic hazards under Alternative 4 would be similar to those described under Alternative 2. The differences in building heights under the two alternatives would not change the need to adhere to seismic standards for design and construction. The addition of a transit center on OTC as part of Alternative 4 would create the potential for more people to be affected by a geologic hazard onsite if it were to occur. However, design and construction of the transit center also would adhere to seismic standards. Therefore, Alternative 4 would result in less than significant impacts to public health and safety from geologic hazards.

Hazardous Materials and Wastes and Installation Restoration Program

Under Alternative 4, the potential for impacts to public health and safety from hazardous materials and wastes are similar to those described under Alternative 2. The addition of a transit center would increase hazardous materials present (e.g., building materials, lubricants, cleaning supplies, batteries, light fixtures). These materials and the wastes generated from their use would be managed by the San Diego Metropolitan Transit System, which has policies and procedures for the management of hazardous materials and wastes. Therefore, Alternative 4 would result in less than significant impacts to public health and safety from hazardous materials and wastes.

Noise

Alternative 4 would have a slightly greater average operational noise than Alternative 2. However, the increase in average noise would be only 0.5 dB community noise equivalent level (CNEL), and this minimal change does not affect the potential noise effects with respect to public health and safety. As with Alternative 2, the biggest impact to noise would come from the extended period of construction. Therefore, Alternative 4 would result in significant impacts to public health and safety from noise.

Security and Force Protection

Under Alternative 4, the potential for impacts to public health and safety from security and force protection are identical to those described under Alternative 2. Therefore, Alternative 4 would have beneficial impacts to public health and safety from security and force protection.

Alternative 4 Public Health and Safety Summary

Based on the analyses presented above for the various potential hazards, Alternative 4 would result in significant impacts for noise on public health and safety.

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

Alternative 5 impacts to public health and safety resources would be similar to those under Alternative 4. However, Alternative 5 would have a lower density buildout than Alternative 4.

Emergency Services

Under Alternative 5, potential impacts to emergency services are the same as described under Alternative 4. Therefore, impacts to emergency services would be less than significant under Alterative 5.

Potential Hazards

Under Alternative 5, impacts to public health and safety would be similar to those described under Alternative 4, only slightly less based on the reduced density for mixed-use development. Therefore, Alternative 5 would have significant impacts on public health and safety from air quality, noise, and the protection of children, and less than significant public health and safety impacts with respect to other potential hazards.

Alternative 5 Public Health and Safety Summary

Based on the analyses presented above for the various potential hazards, Alternative 5 would result in significant impacts for noise to public health and safety.

Summary of Proposed Management Practices, Monitoring, and Mitigation

3.8.3.7 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

The potential monitoring measure identified in Section 3.7, *Hazardous Materials and Wastes*, would apply to public health and safety. No additional monitoring measures or mitigation measures would be warranted for public health and safety based on the analysis presented in Section 3.8.3.

Proposed Management Practices

In addition to the proposed management practices listed below, the management practices from Sections 3.1 (*Air Quality*), 3.7 (*Hazardous Materials and Wastes*), and 3.14 (*Geological Resources*) would also be followed.

The following management practices apply to all Proposed Action Alternatives:

- <u>PHS MGMT-1</u>. Implement all applicable federal and state regulations for demolition and construction including construction safety BMPs and preparation of a construction site safety plan.
- <u>PHS MGMT-2</u>. Any reconfiguration, upgrading, or addition of new electromagnetically capable equipment would undergo electromagnetic interference and radiation hazards studies prior to implementation.

In addition, the following management practices would apply to Alternatives 2 through 5:

- <u>PHS MGMT-3</u>. Submit proposed mixed-use development project plans for a “Crime Prevention Through Environmental Design Review” by the City of San Diego and San Diego Police Department. The review procedure is designed to ensure emergency response times are not significantly impacted by new development.
- <u>PHS MGMT-4</u>. Consult with FAA during the environmental review phase of the Proposed Action Alternatives to gain approval to penetrate various clearance surfaces.

3.8.3.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be less than significant impacts to public health and safety from implementation of the No Action Alternative and Alternative 1. There would be significant impacts to public health and safety from implementation of Alternative 3, Alternative 4, and Alternative 5. The implementation of management practices and monitoring measures described in Section 3.8.3.7 would be used to further minimize or avoid potential impacts.

3.9 Environmental Justice and Protection of Children

The USEPA defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (USEPA, 2020c). It goes on to clarify that "no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies." The USEPA guidance states that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the U.S. and its territories." A USEPA (1996) memorandum on evaluating health risks to children states: "In these cases where there may be an impact on children you should specifically address the question (of whether there are potential disproportionate effects on children) even if it turns out that effects (on children) are not significant. However, if it is reasonably clear from the nature of the Proposed Action Alternatives that there will be no disproportionate impact, there is no reason to require any discussion."

3.9.1 Regulatory Setting

Three EOs dealing directly with environmental justice and protection of children are drivers for NEPA analysis. The environmental justice EO (12898) directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations. EO 14008 amends EO 12898 to create, within the Executive Office of the President, a White House Environmental Justice Interagency Council (Interagency Council) and calls for the Interagency Council to provide recommendations for further updating EO 12898. The protection of children EO (13045) is more specific in concerning environmental risks to health or safety that are attributable to products or substances that the child is likely to come in contact with or ingest.

- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 14008, Tackling the Climate Crisis at Home and Abroad
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks

3.9.2 Affected Environment

The ROI for environmental justice and protection of children is the same census tracts as those used for socioeconomics with the addition of census tract 65. This includes OTC and the surrounding area. The affected environment for environmental justice is a function of demographic data identifying the presence and proximity of low-income and minority populations relative to locations that would be adversely affected by the Proposed Action Alternatives. The U.S. Census Bureau's 2014-2018 American Community Survey provides 5-year estimates of the percentage of the population in each census block group in the ROI that is considered either minority or low-income. The percentages were compared to thresholds or local averages (whichever criteria is more stringent) to determine whether respective census block groups should be considered environmental justice minority or low-income areas. Geographic Information System analysis was used to map census block groups and illustrate the location of environmental justice areas.

The U.S. Census Bureau defines low-income area thresholds as "census tracts or block numbering areas where at least 20 percent of residents were below the poverty level;" however, this analysis compares census block groups in the ROI to the City of San Diego average of 13.8 percent (a more stringent criteria than the 20 percent threshold). Furthermore, results of the geographic analysis of low-income areas were compared to results from the California Office of Environmental Health Hazard Assessment's (2020) CalEnviroScreen 3.0 Poverty Map. Results from the analyses had similar results, with the same general areas identified as low-income areas. The primary difference was that the analysis presented in this section was conducted at the relatively more detailed census block group level as compared to the census tract level.

Minority population thresholds are "identified where either: (a) the minority population of the affected area exceeds 50% or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis" (CEQ, 1997a). Minority populations include populations that report their ethnicity as something other than exclusively non-Hispanic White, and may include Native Hawaiian or other Pacific Islander, Asian, Black or African American, Hispanic or Latin, American Indian, or Alaska Native (U.S. Census Bureau, 2011).

Children are defined as those individuals under the age of 18 years old. Areas with a high concentration of children are identified where children tend to gather, or spend substantial amounts of time, such as schools and parks. Because EO 13045 is more specific in concerning environmental risks to health or safety that are attributable to products or substances that the child is likely to come in contact with or ingest, assessment of impacts to children relates to fewer resource areas than the environmental justice assessment. As such, consistent with the USEPA (1996) memorandum, the assessment of protection of children is conducted with focus on air quality, hazardous materials and waste, public health and safety, noise, and water resources only. For clarity, the assessment of protection of children is presented in a separate subsection, at the end of each of the Proposed Action Alternatives section.

3.9.2.1 Low-income Population Areas

Census Bureau (2018) data indicate that the ROI as a whole, in 2018, had higher per capita and median household incomes and lower percentages of incomes below the poverty line than the City of San Diego, San Diego County, or the State of California. Table 3.9-1 shows the 2018 low-income population proportions for each census block group in the ROI as well as for the City of San Diego, which is used as the comparison area. Five of the 17 census block groups in the ROI had a higher proportion of households with incomes below the poverty level than the City of San Diego. Figure 3.9-1 illustrates the information presented in Table 3.9-1.

Table 3.9-1 Environmental Justice Low-income Areas in the ROI, 2018

Census Block Group	*Households*	*Percent of Households Below the Poverty Level*	*Environmental Justice Low-income Area?*
Block Group 1, Census Tract 1	595	3.7	No
Block Group 2, Census Tract 1	747	2.8	No
Block Group 1, Census Tract 2.02	759	18.4	Yes
Block Group 2, Census Tract 2.02	338	0.0	No
Block Group 3, Census Tract 2.02	1,243	1.8	No
Block Group 1, Census Tract 61	772	4.3	No
Block Group 2, Census Tract 61	363	22.6	Yes
Block Group 1, Census Tract 62	0	0	No
Block Group 1, Census Tract 63	0	0	No
Block Group 1, Census Tract 65	648	18.7	Yes
Block Group 2, Census Tract 65	472	11.7	No
Block Group 3, Census Tract 65	500	17.0	Yes
Block Group 1, Census Tract 66	452	13.1	No
Block Group 1, Census Tract 68.01	1,415	12.1	No
Block Group 1, Census Tract 68.02	640	26.9	Yes
Block Group 2, Census Tract 68.02	986	1.4	No
Block Group 3, Census Tract 68.02	834	11.5	No
City of San Diego (comparison area)	0	13.8	-

Source: U.S. Census Bureau, 2018.

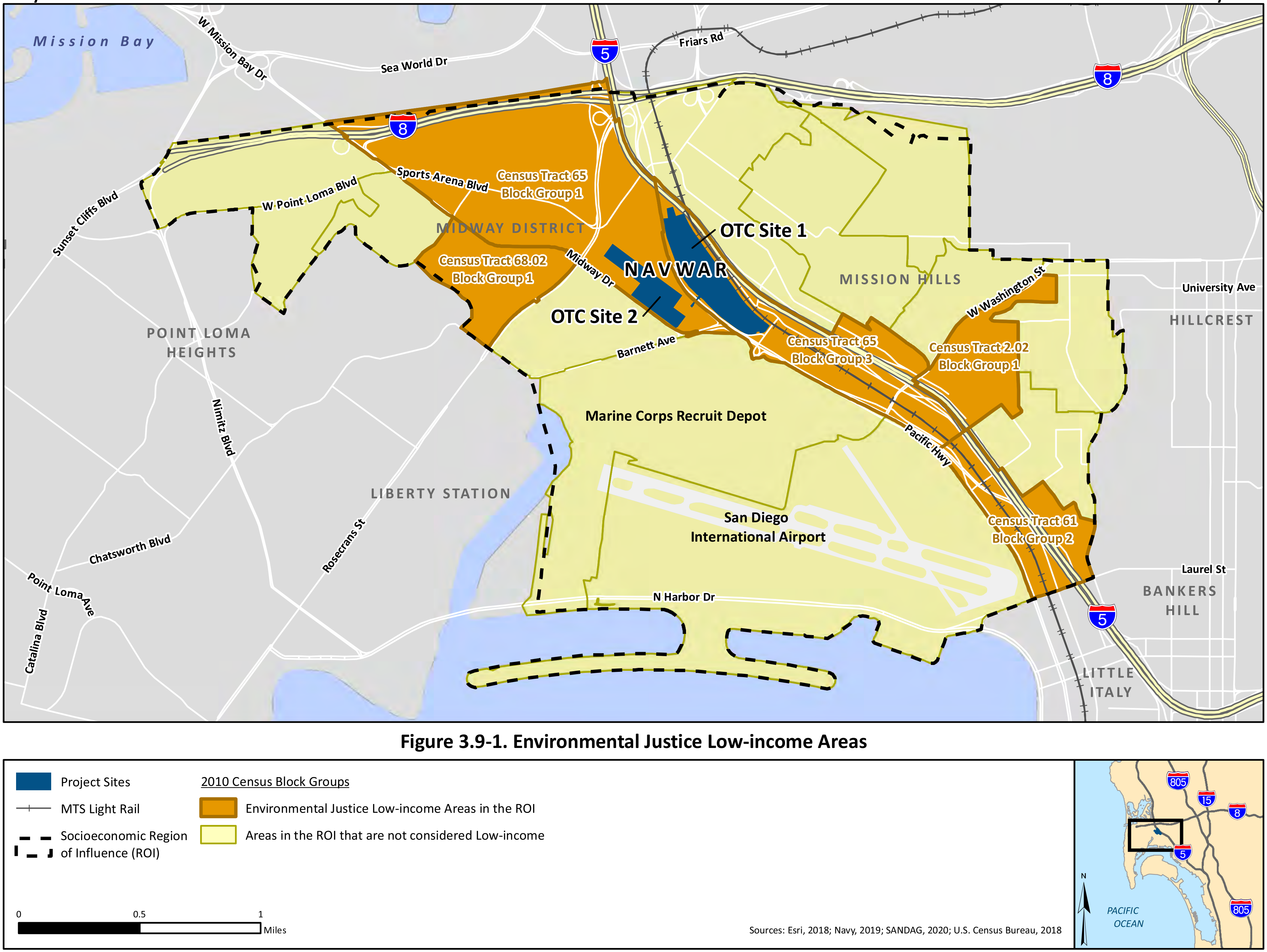


Figure 3.9-1. Environmental Justice Low-income Areas

3.9.2.2 Minority Populations Areas

Census Bureau (2018) data indicate that the overall proportion of the ROI residents in 2018 who were minority was lower than the City of San Diego, San Diego County, or the State of California. Table 3.9-2 shows the 2018 minority population proportions for each census block group in the ROI. Four of the 17 census block groups in the ROI were 50 percent or more minority (census block group 2 of census tract 61, block group 3 of census tract 65, block group 1 of census tract 66, and block group 1 of census tract 68.02). These census block groups include the area immediately surrounding OTC Site 1, an area directly southeast of OTC Site 1, and an area directly west of OTC Site 2. Figure 3.9-2 illustrates the information presented in Table 3.9-2.

Table 3.9-2 Environmental Justice Minority Areas in the ROI, 2018

Census Block Group	*Population*	*Percent of Minority Population*	*Environmental Justice Minority Area?*
Block Group 1, Census Tract 1	1,577	25.4	No
Block Group 2, Census Tract 1	1,673	21.4	No
Block Group 1, Census Tract 2.02	1,271	14.0	No
Block Group 2, Census Tract 2.02	695	6.0	No
Block Group 3, Census Tract 2.02	2,617	41.3	No
Block Group 1, Census Tract 61	1,646	30.6	No
Block Group 2, Census Tract 61	634	53.5	Yes
Block Group 1, Census Tract 62	23	43.5	No
Block Group 1, Census Tract 63	3,715	39.2	No
Block Group 1, Census Tract 65	1,026	35.6	No
Block Group 2, Census Tract 65	829	42.5	No
Block Group 3, Census Tract 65	1,430	53.9	Yes
Block Group 1, Census Tract 66	1,805	54.2	Yes
Block Group 1, Census Tract 68.01	2,861	28.4	No
Block Group 1, Census Tract 68.02	1,657	67.7	Yes
Block Group 2, Census Tract 68.02	2,000	33.7	No
Block Group 3, Census Tract 68.02	1,743	27.3	No

Source: U.S. Census Bureau, 2018.

3.9.2.3 Areas with High Concentrations of Children

Areas with high concentrations of children, including daycare facilities, schools, parks, and libraries are shown in Figure 3.9-3.

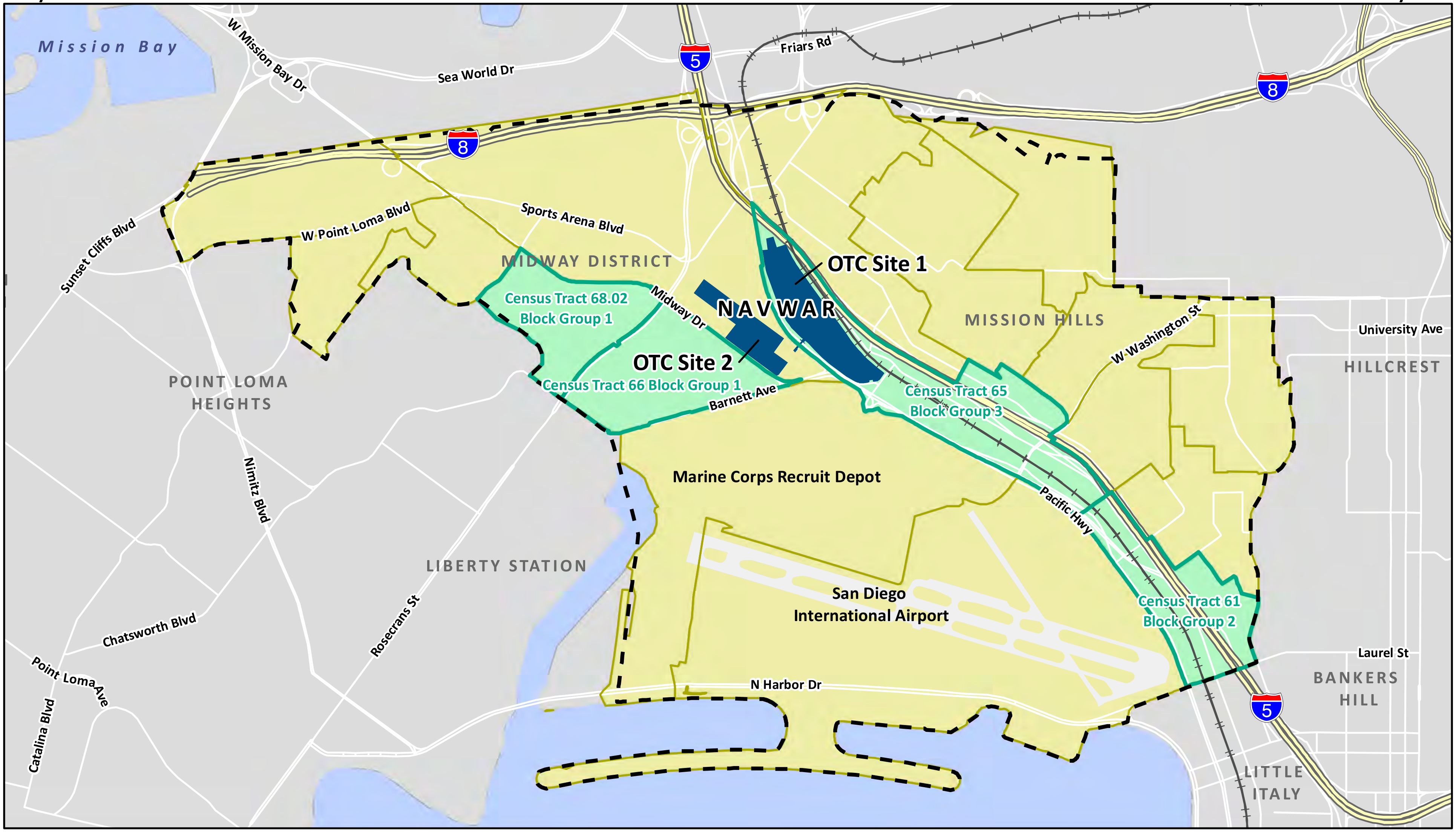


Figure 3.9-2. Environmental Justice Minority Areas

Project Sites

MTS Light Rail

Socioeconomic Region of Influence (ROI)

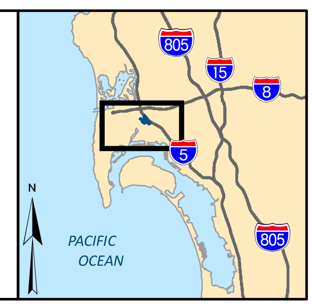
2010 Census Block Groups

Environmental Justice Minority Areas in the ROI

Areas in the ROI that are not considered a Minority Community

0 0.5 1 Miles

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020; U.S. Census Bureau, 2018



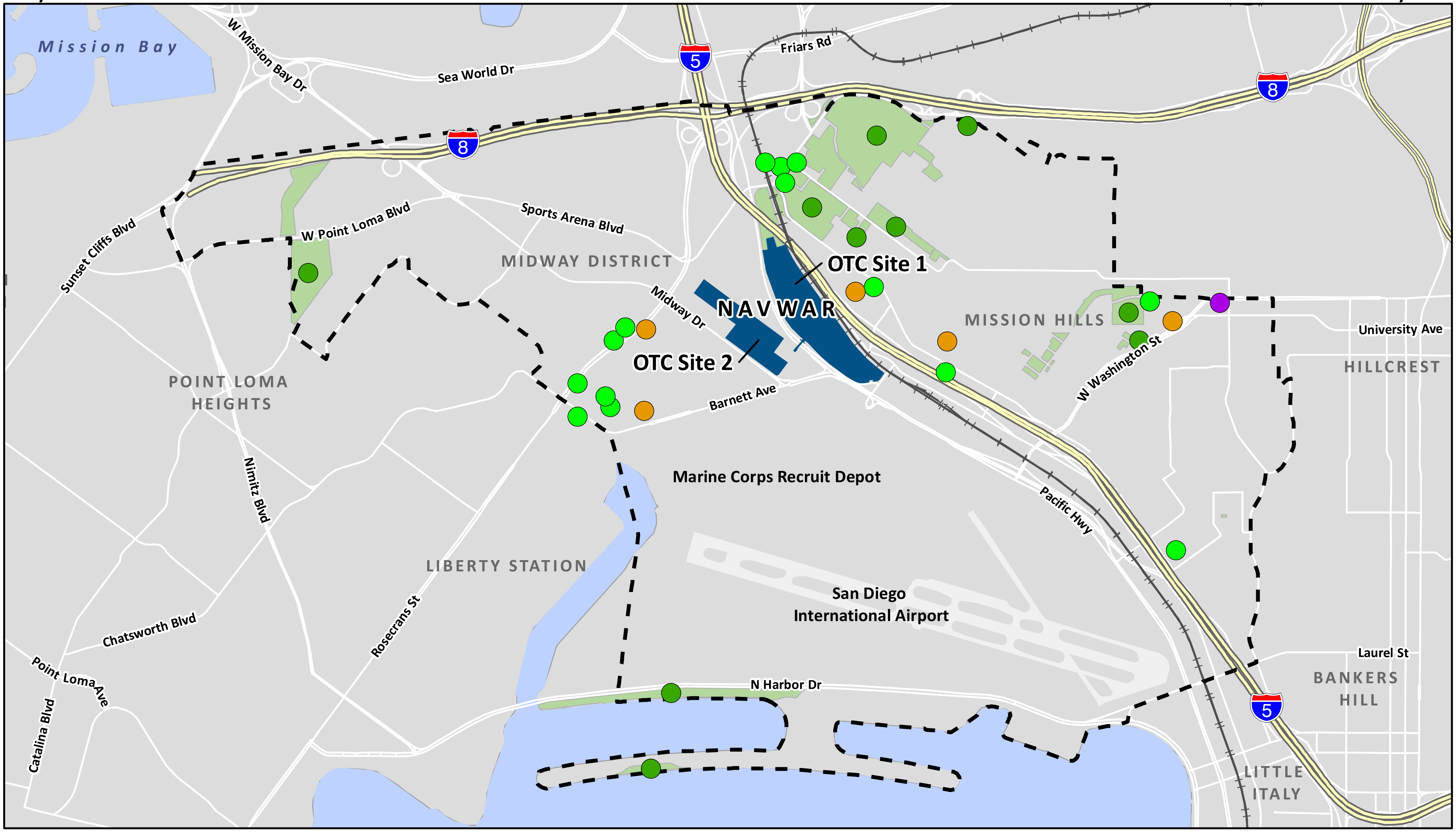
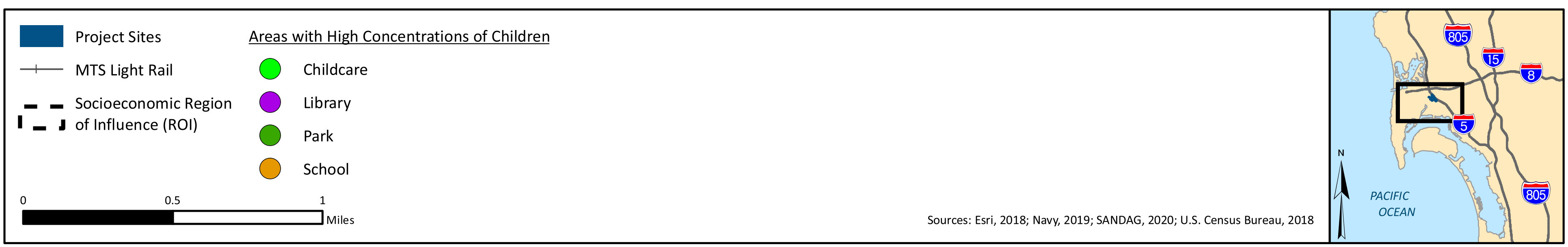


Figure 3.9-3. Areas in the ROI with High Concentrations of Children



3.9.3 Environmental Consequences

The environmental justice analysis summarized below initially focused on whether there would be impacts on the natural or physical environment (as indicated in the respective resource sections) that would result in adverse effects on low-income or minority populations in the ROI. To make these determinations, each resource area that has the potential to adversely affect environmental justice populations is analyzed. In the case that no adverse impacts are identified, a finding of no significant impact on environmental justice is made. When potential adverse impacts to environmental justice populations are identified, the analysis focuses on whether those adverse impacts would disproportionately affect low-income and minority populations and if there are disproportionate adverse impacts then the impact is considered significant. If the adverse impact would not be disproportionate, then a finding of no significant impact to environmental justice is made.

A similar analysis was conducted for protection of children, however only resources relevant specifically to health and safety risks are addressed. These resources include air quality, hazardous materials and waste, public health and safety, noise, and water resources.

As part of the environmental justice process, public outreach efforts were conducted, and the public was consulted for the development of this EIS. The Navy conducted a robust public outreach process utilizing numerous outlets to announce the Notice of Intent to prepare an EIS and conduct public scoping meetings (see Chapter 1 for more information on public scoping). The Navy held two public scoping meetings on Thursday, February 13, 2020 and Wednesday, February 19, 2020, from 4 to 7 p.m., at the Liberty Station Conference Center Main Hall. Members of the public were encouraged to fill out comment forms to ensure their comments were submitted during the public comment period. Individuals could submit completed forms at the public scoping meetings or mail written comments to the address provided on the comment form and on the fact sheets. Written comments could also be submitted via the website.

3.9.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not be implemented and there would be no change to environmental justice communities or protection of children. Therefore, no impacts to environmental justice populations would occur with the implementation of the No Action Alternative.

3.9.3.2 Alternative 1: NAVWAR-Only Redevelopment

Air Quality

Section 3.1, *Air Quality*, indicates that there would be less than significant impacts related to criteria pollutants, CO Hot Spots, HAPs, and GHG. Impacts to health would be less than significant during construction. While air quality would be reduced, generally resulting in an adverse effect, with management practices identified in Section 3.1.3.9.1, no adverse health effects on low-income or minority residents are anticipated and there would be no significant impacts on environmental justice.

Transportation

Section 3.2, *Transportation*, indicates that, under Alternative 1, there would be significant impacts at numerous intersections in the immediate vicinity of OTC. These impacts would tend to increase traffic in that vicinity and adversely affect travel times. Residents of the areas in the immediate vicinity of OTC would be most strongly affected as most travel tends to be close to home. The areas in the immediate vicinity of OTC are either low-income or minority areas, and therefore low-income and minority populations would tend to experience adverse effects disproportionately. Therefore, this would represent a significant impact on environmental justice.

Visual Resources

Section 3.3, *Visual Resources* indicates that there would be no change to visual resources associated with Alternative 1; therefore, no population (including low-income or minority populations) would be adversely affected and there would be no impact on environmental justice.

Land Use

No planned changes to existing land use and functions would occur at either OTC Site 1 or OTC Site 2. The redevelopment of the existing buildings on OTC Site 1 would not increase their height and the demolition of buildings on OTC Site 1 would provide additional onsite parking that would reduce the usage of public on-street parking by NAVWAR and its contractors. No adverse effects on low-income or minority residents were identified in Section 3.4, *Land Use*. Therefore, there would be no impacts to environmental justice.

Socioeconomics

As described in Section 3.5, *Socioeconomics*, due to increased construction activity over a 5-year period, economic impacts from Alternative 1 would have temporary and less than significant beneficial impacts in terms of jobs, labor income, GCP, and government revenue. No permanent population increase is anticipated, and housing affordability would not be affected. No potential adverse economic effects on low-income or minority populations were identified in Section 3.5, *Socioeconomics,* therefore there would be no impacts to environmental justice.

Cultural Resources

As described in Section 3.6, *Cultural Resources*, Alternative 1 would adversely affect the Consolidated Aircraft 2 Historic District, representing significant impacts to cultural resources. The Consolidated Aircraft 2 Historic District relates to military history and culture and is not particularly associated with the culture of any minority group; therefore, no minority group would be disproportionately affected and there would be no impact on environmental justice.

Hazardous Materials and Waste

As described in Section 3.7, *Hazardous Materials and Waste*, potential risks to health and safety related to hazardous materials and waste would be primarily confined to construction sites and would have minimal potential to affect off-site areas. The implementation of management practices and monitoring measures described in Section 3.7.3.7 would further minimize or avoid potential impacts. Given that there would be a very low probability of adverse impact for any residents, no adverse effects on low-income or minority residents are anticipated and there would be no impacts on environmental justice.

Public Health and Safety

As described in Section 3.8, *Public Health and Safety*, potential impacts to public health and safety would relate to construction activities. Potential impacts to construction workers would be limited by a construction site safety plan, and through implementation of standard Occupational Safety and Health Administration and local safety construction guidelines. Outside the construction site, air quality during construction would be adversely affected and noise levels would be elevated. Neither of these effects would significantly impact the health or safety of nearby residents and would impact all nearby areas to a similar extent, indicating no disproportionate impact. Because there would not be a disproportionate impact there would be no impact on environmental justice.

Public Services

As described in Section 3.10, *Public Services*, there would be no permanent population increase under Alternative 1 indicating that levels of service provided by public service agencies would not be adversely affected and services to low-income and minority populations would not be diminished. Additionally, no public service providers would be displaced under Alternative 1. Because there would be no adverse impact to the provision of public services, there would be no impacts on environmental justice.

Infrastructure

As described in Section 3.11, *Infrastructure*, there would be no alteration of off-site infrastructure during construction; therefore, there would be no adverse effects to local residents (including low-income and minority populations) and there would be no impact on environmental justice.

Noise

As described in Section 3.13, *Noise*, aircraft activity at San Diego International Airport and vehicular traffic along Interstate 5 and city streets would remain the primary source of noise in the ROI so noise impacts to residences and other sensitive receptors from Alternative 1 would be less than significant. Because construction under Alternative 1 would occur towards the northwest corner of OTC Site 1, noise impacts to residences north of OTC Site 1 may be more adverse (though still not significant) than in other parts of the ROI; however, the environmental justice population areas are located to the south of OTC Site 1 and would therefore not be disproportionately affected. As such there would be no disproportionate effects and there would be no impacts on environmental justice.

Geological Resources

Alternative 1 would have less than significant impacts on topography, mineral resources, soils, and geologic hazards. Section 3.14 *Geological Resources* does not indicate that any populations (low-income and minority populations included) would be adversely impacted by potential changes to geological resources. As such, there would be no impact on environmental justice related to geology.

Water Resources

As described in Section 3.15, *Water Resources*, Alternative 1 would not substantially affect water quality. As such, no populations (including low-income and minority populations) would be adversely impacted and there would be no impact on environmental justice related to water resources.

Protection of Children

As indicated above, with reference to Alternative 1, hazardous materials and waste would be limited to construction sites and there would be a very low probability for children to be affected, and no adverse effects would be anticipated. Also as indicated above, there would not be a change to water quality that would affect any populations. Construction noise and reduced air quality would affect locations including childcare facilities and one elementary school. The effects would not be at a level that could be harmful to the health or safety of children and no classroom disruption would occur. Increased traffic in the area would tend to increase health and safety risks from moving vehicles. Because there would be adverse health risk associated with increased traffic under Alternative 1, there would be a significant impact on protection of children.

3.9.3.3 Alternative 2: Public-Private Development – NAVWAR and Higher Density Mixed Use

Air Quality

Section 3.1, *Air Quality*, indicates that there would be less than significant impacts related to criteria pollutants, CO Hot Spots, HAPs, and GHG. Impacts to health would be less than significant during both construction and operations. While air quality would be reduced, generally resulting in an adverse effect, with management practices identified in Section 3.1.3.9.1, no adverse health effects on low-income or minority residents are anticipated and there would be no impacts on environmental justice.

Transportation

Section 3.2, *Transportation*, indicates that, under Alternative 2, there would be significant impacts at numerous intersections in the immediate vicinity of OTC. These impacts would tend to increase traffic in that vicinity and adversely affect travel times. Residents of the areas in the immediate vicinity of OTC would be most strongly affected as most travel tends to be close to home. The areas in the immediate vicinity of OTC are either low-income or minority areas, and therefore low-income and minority populations would tend to be experience adverse effects disproportionately. Therefore, this would represent a significant impact on environmental justice.

Visual Resources

View quality from some locations would be adversely affected under Alternative 2. The affected locations, primarily Mission Hills, are not considered a low-income or minority areas. Because locations that would be adversely affected are not low-income or minority areas, there would be no impact to environmental justice related to visual resources.

Land Use

Alternative 2 would not diminish the effectiveness of land use control mechanisms for the Midway-Pacific Highway Community Plan area. Furthermore, in order to maintain land use compatibility, the Navy considered the goals of the Midway-Pacific Highway Community Plan in the development of alternatives, which include developing the area surrounding OTC as an employment and residential-focused urban village called Dutch Flats. Because land use controls would not be diminished and land use compatibility would be maintained, there would be no adverse effects on low-income or minority populations and therefore, there would be no impacts on environmental justice.

Socioeconomics

Economic impacts under Alternative 2 would be beneficial in terms of jobs, labor income, GCP, and government revenue. The additional market rate housing units, which could be accompanied by affordable units, would not reduce housing affordability in the ROI. No potential adverse economic effects on low-income or minority populations were identified in Section 3.5, *Socioeconomics*, therefore there would be no impacts on environmental justice.

Cultural Resources

Alternative 2 would result in the demolition of the Consolidated Aircraft Plant 2 Historic District and would alter characteristics of 19 nearby historic properties, representing significant impacts to cultural resources. The Consolidated Aircraft Plant 2 Historic District is not disproportionately associated with minority populations, however many of the 19 other historic properties would be associated with Hispanic culture pre-1900 (see Table 3.6-2). As indicated in Table 3.6-2, the affected historic properties would disproportionately relate to Hispanic culture. Therefore, this would represent a significant impact on environmental justice. This significant impact may be mitigated with measures described in Section 3.6.3.7.

Hazardous Materials and Waste

As described in Section 3.7, *Hazardous Materials and Waste*, potential risks to health and safety related to hazardous materials and waste would be primarily confined to construction sites and would have minimal potential to affect off-site areas. The implementation of management practices and monitoring measures described in Section 3.7.3.7 would further minimize or avoid potential impacts. Given that there would be a very low probability of adverse impact for any residents, no adverse effects on low-income or minority residents are anticipated and there would be no impacts on environmental justice.

Public Health and Safety

As described in Section 3.8, *Public Health and Safety*, potential impacts to public health and safety would relate to construction activities. Potential impacts to construction workers would be limited by a construction site safety plan, and through implementation of standard Occupational Safety and Health Administration and local safety construction guidelines. Outside the construction site, air quality during construction would be reduced and noise levels would be elevated. Neither of these effects would significantly impact the health or safety of nearby residents, but they would constitute adverse impacts. While there would be adverse impacts, all nearby areas would tend to be affected to a similar extent, indicating no disproportionate impact. Because there would not be a disproportionate impact there would be no impact on environmental justice.

Public Services

There would be a requirement for additional personnel to maintain current levels of service for schools, police, fire-rescue, library, and park services. These requirements could be funded by tax revenue and developer requirements associated with Alternative 2 development. If those requirements are met, then no populations (including minority and low-income populations) would not be adversely impacted. Additionally, no public service providers would be displaced under Alternative 2. Because no adverse impacts would occur, there would be no impact on environmental justice related to public services.

Infrastructure

Like Alternative 1, there would be no change to off-site infrastructure during construction and therefore no adverse effects on populations. As described in Section 3.11, *Infrastructure*, with relation to operations, Alternative 2 would result in potentially significant impacts to water utilities. This potential impact would be related to the effects of additional residential population drawing from remaining water capacity. However, no interrupted water service is anticipated, indicating that there would not be adverse impacts related to utilities outages. Also, while it is possible that water utility rates would rise over time due to overall draw from capacity, increasing rates would not be due to Alternative 2 itself and would be more associated with baseline trends and general population growth in the region. Because no utilities outages are anticipated and utility rates would not be expected to rise due to Alternative 2, there would be no impacts to environmental justice related to infrastructure.

Noise

Under Alternative 2, construction noise would not be likely to substantially affect any residences relative to existing noise levels in nearby areas. Additionally, residences to the north of OTC Site 1, which are not considered environmental justice population areas, would tend to be more affected by adverse effects of noise than residences to the south of either OTC Site 1 or OTC Site 2. As such, there would not be disproportionate impacts and no impact to environmental justice.

Geological Resources

Alternative 2 would have less than significant impacts on topography, mineral resources, soils, and geologic hazards. Section 3.14, *Geological Resources* does not indicate that any populations (low-income and minority populations included) would be adversely impacted by potential changes to geological resources. As such, there would be no impact on environmental justice related to geological resources.

Water Resources

As described in Section 3.15, *Water Resources*, Alternative 2 would not substantially affect water quality. As such, no populations (including low-income and minority populations) would be adversely impacted and there would be no impact on environmental justice related to water resources.

Protection of Children

As indicated above, with reference to Alternative 2, hazardous materials and waste would be limited to construction sites and there would be a very low probability for children to be affected. Also as indicated above, there would not be a change to water quality that would affect any populations. Air quality reductions and construction noise would affect locations including daycare facilities, preschools, parks, and one elementary school. The effects would not be at a level that could be harmful to the health or safety of children and no classroom disruption would occur. Increased traffic in the area would tend to increase health and safety risks from moving vehicles. Because there would be adverse health risk associated with increased traffic under Alternative 2, the would be a significant impact on protection of children.

3.9.3.4 Alternative 3: Public-Private Development – NAVWAR and Lower Density Mixed Use

Impacts under Alternative 3 would be similar to but slightly less than those described under Alternative 2 for the following resources:

- Air Quality (Section 3.1)
- Transportation (Section 3.2)
- Visual Resources (Section 3.3)
- Land Use (Section 3.4)
- Socioeconomics (Section 3.5)
- Cultural Resources (Section 3.6)

- Hazardous Materials and Waste (Section 3.7)
- Public Health and Safety (Section 3.8)
- Public Services (Section 3.10)
- Infrastructure (Section 3.11)
- Noise (Section 3.13)
- Geological Resources (Section 3.14)
- Water Resources (Section 3.15)
- Additionally, impacts on the health and safety of children under Alternative 3 would be similar to those described under Alternative 2.

3.9.3.5 Alternative 4: Public-Private Development – NAVWAR and Higher Density Mixed Use with a Transit Center

Air Quality

Section 3.1, *Air Quality*, indicates that there would be less than significant impacts related to criteria pollutants, CO hot spots, HAPs, and GHG. Impacts to health would be less than significant during both construction and operations. While air quality would be reduced, generally resulting in an adverse effect, with management practices identified in Section 3.1.3.9.1, no adverse health effects on low-income or minority residents are anticipated and there would be no impacts on environmental justice.

Transportation

Section 3.2, *Transportation*, indicates that, under Alternative 4, there would be significant impacts at numerous intersections in the immediate vicinity of OTC. These impacts would tend to increase traffic in that vicinity and adversely affect travel times. Residents of the areas in the immediate vicinity of OTC would be most strongly affected as most travel tends to be close to home. The areas in the immediate vicinity of OTC are either low-income or minority areas, and therefore low-income and minority populations would tend to be experience adverse effects disproportionately. Therefore, this would represent a significant impact on environmental justice.

Visual Resources

View quality from some locations would be adversely affected under Alternative 4. The affected locations, primarily as Mission Hills, are not considered a low-income or minority areas. Because locations that would be adversely affected are not low-income or minority areas, there would be no impact to environmental justice related to visual resources.

Land Use

The land uses planned as part of Alternative 4 are similar to Alternative 2, and the uses are consistent with the types of current and future land use identified in the Midway-Pacific Highway Community Plan and other local, regional, and federal planning documents. Also, as indicated in Section 3.4, *Land Use* Alternative 4 would not diminish the effectiveness of land use control mechanisms for the area. Because land use controls would not be diminished and land use compatibility would be maintained, there would be no adverse effects on low-income or minority populations and therefore, there would be no impacts on environmental justice.

Socioeconomics

Economic impacts under Alternative 4 would be beneficial in terms of jobs, labor income, GCP, and government revenue. The additional market rate housing units, which could be accompanied by affordable units, would not reduce housing affordability in the ROI. No potential adverse economic effects on low-income or minority populations were identified in Section 3.5, *Socioeconomics*, therefore there would be no impacts on environmental justice.

Cultural Resources

Alternative 4 would result in the demolition of the Consolidated Aircraft Plant 2 Historic District and would alter characteristics of 19 nearby historic properties, representing significant impacts to cultural resources. The Consolidated Aircraft Plant 2 Historic District is not disproportionately associated with minority populations, however many of the 19 historic properties would be associated with Hispanic culture pre-1900 (see Table 3.6-2). As indicated in Table 3.6-2, the affected historic properties would disproportionately relate to Hispanic culture. Therefore, this would represent a significant impact on environmental justice. This significant impact may be mitigated with measures described in Section 3.6.3.7.

Hazardous Materials and Waste

As described in Section 3.7, *Hazardous Material and Waste*, potential risks to health and safety related to hazardous materials and waste would be primarily confined to construction sites and would have minimal potential to affect off-site areas. The implementation of management practices and monitoring measures described in Section 3.7.3.7 would further minimize or avoid potential impacts. Given that there would be a very low probability of adverse impact for any residents, no adverse effects on low-income or minority residents are anticipated and there would be no impacts on environmental justice.

Public Health and Safety

As indicated in Section 3.8, *Public Health and Safety*, potential impacts to public health and safety would relate to construction activities, and operations of the transit center. Potential impacts to construction workers would be limited by a construction site safety plan, and through implementation of standard Occupational Safety and Health Administration and local safety construction guidelines. Outside the construction site, air quality during construction would be adversely affected, noise levels would be elevated, and traffic (vehicle, transit, and pedestrian) would be increased around the transit center. These effects would not significantly impact the health or safety of nearby residents, but they would constitute adverse impacts. While there would be adverse impacts, all nearby areas would tend to be affected to a similar extent, indicating no disproportionate impact. Because there would not be a disproportionate impact there would be no impact on environmental justice.

Public Services

There would be a requirement for additional personnel to maintain current levels of service for schools, police, fire-rescue, library, and park services. These requirements could be funded by tax revenue and developer requirements associated with Alternative 4 development. If those requirements are met, then no populations (including minority and low-income populations) would not be adversely impacted. Additionally, no public service providers would be displaced under Alternative 4. Because no adverse impacts would occur, there would be no impact on environmental justice related to public services.

Infrastructure

Like Alternative 1, there would be no change to off-site infrastructure during construction, and therefore no potential adverse effects on populations. As described in Section 3.11, *Infrastructure*, Alternative 4 would result in potentially significant impacts to water utilities. This potential impact would be related to the effects of additional residential population drawing from remaining water capacity. However, no interrupted water service is anticipated, indicating that there would not be adverse impacts related to utilities outages. Also, while it is possible that water utility rates would rise over time due to overall draw from capacity, increasing rates would not be due to Alternative 4 itself and would more be associated with baseline trends and general population growth in the region. Because no utilities outages are anticipated and utility rates would not be expected to rise due to Alternative 4, there would be no impacts to environmental justice related to infrastructure.

Noise

Under Alternative 4, construction noise would not be likely to substantially affect any residences relative to existing noise levels in nearby areas. Additionally, residences to the north of OTC Site 1, which are not considered environmental justice population areas, would tend to be more affected by construction noise than residences to the south of either OTC Site 1 or OTC Site 2. As such, there would not be disproportionate impacts and no significant impact to environmental justice with respect to construction. Furthermore, as indicated in Section 3.13, *Noise*, the risk that future noise sensitive uses such as residences (constructed in association with the Proposed Action Alternatives) would be negatively impacted by aircraft noise is relatively low, and therefore in terms of operations, there would be no impact on environmental justice.

Geological Resources

Alternative 4 would have less than significant impacts on topography, mineral resources, soils, and geologic hazards. Section 3.14, *Geological Resources* does not indicate that any populations (low-income and minority populations included) would be adversely impacted by potential changes to geological resources. As such, there would be no impact on environmental justice related to geological resources.

Water Resources

Alternative 4 would not substantially affect water quality. As such, no populations (including low-income and minority populations) would be adversely impacted and there would be no impact on environmental justice related to water resources.

Protection of Children

As indicated above, with reference to Alternative 4, hazardous materials and waste would be limited to construction sites and there would be a very low probability for children to be affected. Also as indicated above, there would not be a change to water quality that would affect any populations. Air quality reductions and construction noise would affect locations including daycare facilities, preschools, parks, and one elementary school. The effects would not be at a level that could be harmful to the health or safety of children and no classroom disruption would occur. Increased traffic in the area would tend to increase health and safety risks from moving vehicles. Because there would be adverse health risk associated with increased traffic under Alternative 4, the would be a significant impact on protection of children.

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

Impacts under Alternative 5 would be similar to but slightly less than those described under Alternative 4 for the following resources:

- Air Quality (Section 3.1)
- Transportation (Section 3.2)
- Visual Resources (Section 3.3)
- Land Use (Section 3.4)
- Socioeconomics (Section 3.5)
- Cultural Resources (Section 3.6)
- Hazardous Materials and Waste (Section 3.7)
- Public Health and Safety (Section 3.8)
- Public Services (Section 3.10)
- Infrastructure (Section 3.11)
- Noise (Section 3.13)
- Geological Resources (Section 3.14)
- Water Resources (Section 3.15)

Additionally, impacts on the health and safety of children under Alternative 5 would be similar to those described under Alternative 4.

3.9.3.7 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

Management practices and potential mitigation measures identified in Section 3.2, *Transportation*, potential monitoring measures and potential mitigation identified in Section 3.6, *Cultural Resources*,, would apply to environmental justice. No additional management practices, potential monitoring measures, or potential mitigation would be warranted for environmental justice based on the analysis presented in Section 3.9.3.

3.9.3.8 Summary of Effects and Conclusions

Based on the analysis above, there would be no impact on environmental justice from the No Action Alternative. However, there would be significant impacts on environmental justice relating to transportation for Alternatives 1-5, and cultural resources for Alternatives 2-5. Transportation impacts would stem from increased traffic and relatively longer travel times for low-income and minority populations residing near the project area. Impacts from cultural resources would relate to impacts on historical properties that tend to be disproportionately related to Hispanic history and culture. There would also be significant impacts on protection of children under Alternatives 1-5 related to transportation as increased traffic concentrated near the project sites would increase safety risks to children in those areas.

3.10 Public Services

Public services are the government-provided and tax-funded services that are intended to benefit all citizens of a community. For the purposes of this EIS, this section evaluates the potential effects of the Proposed Action Alternatives on the following public services: public schools, police, fire/rescue, libraries, and parks. These services are relevant to the Proposed Action Alternatives 2 through 5 because of the population growth expected to be generated by the proposed redevelopment of OTC, as described in detail in Section 3.5, *Socioeconomics*. Population growth increases the demand for public services and, to the extent that additional demand approaches or exceeds the available capacity of such services, impacts to the quality or availability of public services could result.

3.10.1 Regulatory Setting

The CEQ regulations implementing NEPA state that when social effects and natural or physical environmental effects are interrelated, the EIS will evaluate these effects on the human environment (40 CFR section 1508.14). The CEQ regulations further state that the "human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment." In addition, 40 CFR section 1508.8 states that agencies need to assess not only direct effects, but also "aesthetic, historic, cultural, economic, social, or health" effects. Following these regulations, the public services analysis in this EIS evaluates how increased population associated with the Proposed Action Alternatives could affect public services.

Laws and regulations applicable to an analysis of public services impacts include the following:

- California Senate Bill 50
- California State Assembly Bill 2926: School Facilities Act of 1986
- California Government Code 65996
- San Diego Municipal Code section 142.0640

3.10.2 Affected Environment

Information presented in the affected environment section establishes baseline conditions for public services in terms of LOS. LOS is measured as the ratio between the amount of public service provided (e.g., number of teachers) and the population that utilizes the service (e.g., number of students). Different levels of service that are established as baseline conditions in this section include: student-teacher ratio, police officers to population ratio, fire-EMT personnel to population ratio, library employees to population ratio, and the City of San Diego's standard of providing 2.8 acres of parkland for every 1,000 residents (City of San Diego, 2019b). These ratios are used in the impacts analysis, in conjunction with estimates of population increase associated with each action alternative, to estimate the additional amount of public services (e.g., teachers or park space) that would be required to maintain levels of service under the Proposed Action Alternatives. Some additional information on public school capacity and response times for police and fire-rescue services are also included, as impacts to these measures are considered in the environmental consequences section.

Figure 3.10-1 shows the ROI for public services analysis. The ROI is based on the socioeconomic ROI (see Section 3.5, *Socioeconomics*), which indicates the area of residence for the population that would be most affected by the Proposed Action Alternatives. The figure also shows public services locations outside of the ROI that provide service to the ROI. For example, populations located within the ROI may go to schools, or be serviced by fire stations, located outside of the ROI.

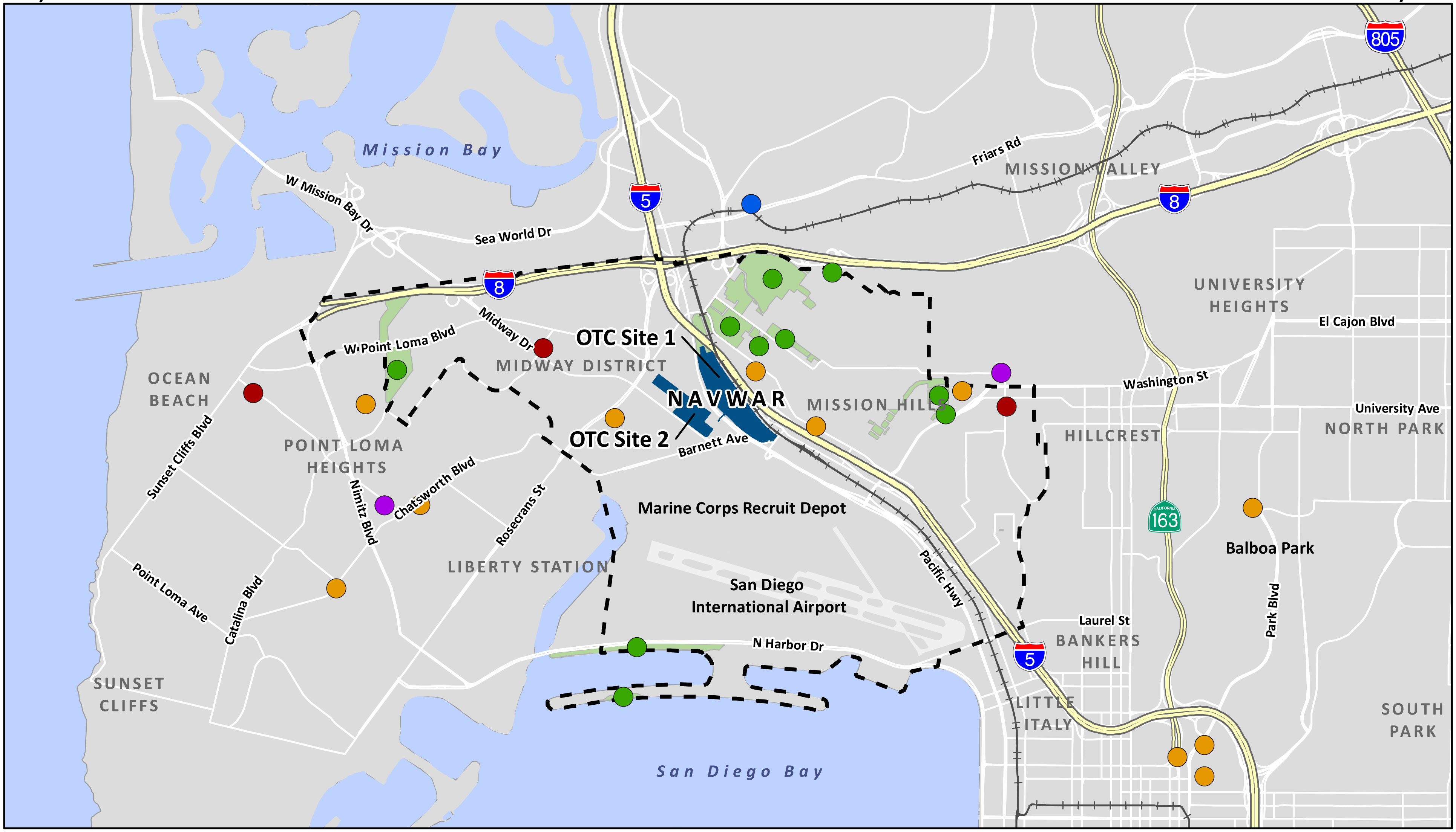
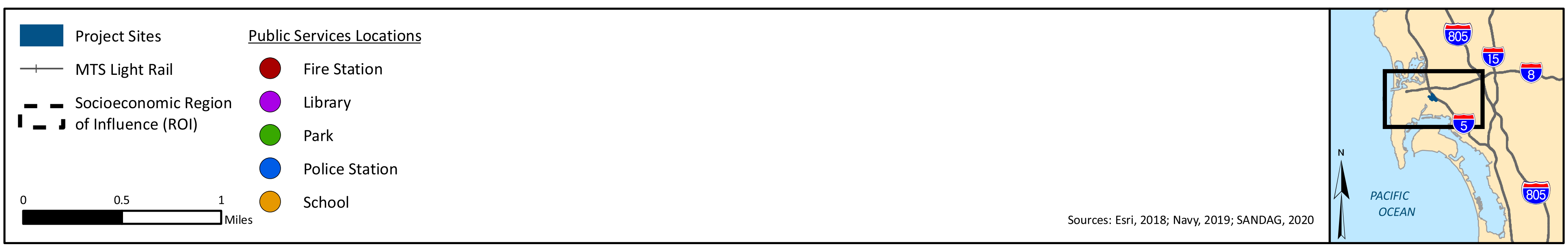


Figure 3.10-1. Public Services



3.10.2.1 Public Schools

Public school student generation rates for single-family and multi-family housing units in the Old Town area of San Diego are shown in Table 3.10-1. Single-family units generated more than 2.5 times the number of students generated in multi-family units (0.193 students per unit compared to 0.072 students per unit). Multi-family units generated a higher rate of grades K-5 (elementary school) students (0.031 per housing unit) than grades 6-8 (middle school) students (0.019) and grades 9-12 (high school) students (0.022). As an example, for every 100 new multi-family apartment units developed, these data trends would suggest that those units would generate an average of 3.1 elementary school students, 1.9 middle school students, and 2.2 high school students for a total of 7.2 students.

Table 3.10-1 Student Generation per Housing Unit

Community Plan Area	*Housing Type*	*Number of Existing Units*	*2016-2017 Students*	*Student Generation Rate*
Old Town San Diego	Single-family	151	K-5: 11	K-5: **0.073**
Old Town San Diego	Single-family	151	6-8: 9	6-8: **0.060**
Old Town San Diego	Single-family	151	9-12: 9	9-12: **0.060**
Old Town San Diego	Single-family	151	K-12: 29	K-12: **0.193**
Old Town San Diego	Multi-family	323	K-5: 10	K-5: **0.031**
Old Town San Diego	Multi-family	323	6-8: 6	6-8: **0.019**
Old Town San Diego	Multi-family	323	9-12: 7	9-12: **0.022**
Old Town San Diego	Multi-family	323	K-12: 23	K-12: **0.072**

Source: City of San Diego, 2017a.

Table 3.10-2 shows student-teacher ratios, the number of enrolled students per teacher, at potentially affected schools over the 2015 to 2018 period. During that period, the student-teacher ratio at elementary schools increased from 20.5 to 20.9 (by 2.0 percent), declined from 21.2 to 21.0 (by 0.9 percent) at middle schools; and declined from 19.9 to 17.3 (by 13.1 percent) at high schools. For the 2017-2018 school year, the national average student-teacher ratio was 15.8 (National Education Association, 2019).

Table 3.10-2 Student-Teacher Ratios at Potentially Affected Schools

Schools	*2015-2016*	*2016-2017*	*2017-2018*
Dewey Elementary	17.1	19.2	18.4
Grant K-8	19.4	20.9	20.8
Dana 5th and 6th	23.4	23.6	22.6
Elementary School Total	**20.5**	**21.6**	**20.9**
Correia Middle	23.1	22.1	22.4
Roosevelt International Middle	19.9	20.0	20.1
Middle School Total	**21.2**	**20.8**	**21.0**
Point Loma High	21.5	21.9	21.9
San Diego High Complex	18.8	19.8	14.8
San Diego Business/Leadership	16.3	16.2	11.2
San Diego International Studies	19.9	22.8	16.9
San Diego Science and Technology	20.3	19.8	15.8
High School Total	**19.9**	**20.7**	**17.3**

Source: Ed-Data, 2020.

Despite generally higher student-teacher ratios relative to the national average, as shown in Table 3.10-3, potentially affected schools, per the San Diego Unified School District, have been generally operating below capacity (i.e., they can have more students without over-stressing their academic mission). Potentially affected elementary schools, as of the 2017-2018 school year, had remaining capacity for an additional 539 students. Middle schools had remaining capacity for 728 additional students, and high schools had remaining capacity for an additional 498 students.

Table 3.10-3 Remaining Capacity at Potentially Affected Schools, 2017-2018 School Year

Schools	*Capacity*	*Enrollment 2017-2018*	*Remaining Capacity*
Dewey Elementary	441	386	55
Grant K-8	772	747	25
Dana 5th and 6th	1,227	768	459
Elementary School Total	**2,440**	**1,901**	**539**
Correia Middle	1,037	761	276
Roosevelt International Middle	1,435	983	452
Middle School Total	**2,472**	**1,744**	**728**
Point Loma High	2,100	1,930	170
San Diego High Complex	2,778	2,450	328
San Diego Business/Leadership	885	560	325
San Diego International Studies	1055	1132	-77
San Diego Science and Technology	838	758	80
High School Total	**4,878**	**4,380**	**498**

Source: Voice of San Diego, 2019.

3.10.2.2 Police

Police services in the ROI are provided by the City of San Diego Police Department. In 2017, the department had 1,752 police officers (Federal Bureau of Investigation, 2017). The ROI is served by the City of San Diego Police Departments' Western Division, one of nine divisions, with its station located approximately 1.0 mile from project site (see Figure 3.10-1). As of February 28, 2020, the Western Division had 101 sworn officers (City of San Diego, 2020b), for a service population of approximately 130,000 (San Diego Police Department, 2020)—a rate of 1,284 in population per sworn officer (or 1.23 sworn officers per 1,000 in population).

OTC currently falls under DoD and federal jurisdiction. OTC is located in the San Diego Police Department's Beat 611 where average response times in 2016 were 6.1 minutes for emergency calls, 11.8 minutes for priority 1 calls, 30.0 minutes for priority 2 calls, 83.1 minutes for priority 3 calls, and 156 minutes for priority 4 calls. For priority 1 and 2 calls, these response times meet department goals but response times for priority 3 and 4 calls do not meet department goals (City of San Diego, 2020b).

3.10.2.3 Fire-rescue

The San Diego Fire-rescue Department, as of 2018, covered an area of 343 square miles and a population estimated at 1.4 million. The department has 52 stations, 9 permanent lifeguard stations, 892 uniformed fire personnel, 98 permanent lifeguard personnel, and 246 non-uniformed personnel. Out of approximately 160,000 incidents that the department responded to in 2018, 69.1 percent were emergency medical responses, 9.4 percent were urgent medical responses, 9.2 percent were non-emergency medical responses, 7.2 percent were hazard responses, and 3.9 percent were fire responses (San Diego Fire Department, 2020).

The station nearest to OTC is San Diego Fire-rescue Station 20, located approximately 1.0 mile away; other nearby stations include Stations 8 and 15 (see Figure 3.10-1). The proportion of station responses to the area near OTC are presented in Table 3.10-4. In general, the stations located near OTC responded to calls in Old Town and Midway a relatively small portion of the time (on average 6.2 percent of combined station responses went to Old Town or Midway).

Table 3.10-4 San Diego Fire Department Responses of Stations 8, 15, and 20 to Old Town and Midway, 2016

Fire Department Stations	*Responses*	*% of Station Responses*
Station 8	123	4.30%
Station 15	5	0.20%
Station 20	442	10.30%
Total	**570**	**6.20%**

Legend: % = percent.
Source: City of San Diego, 2017a.

3.10.2.4 Libraries

Library services are provided by the San Diego Public Library and its branch locations. The Old Town community is served by two branch locations, the Mission Hills-Hillcrest Branch Library located in the Uptown community and the Point Loma/Hervey Library located in the Peninsula community. The Central Library in downtown is accessible from Old Town via the trolley (City of San Diego, 2017a). Various library improvements, including the Mission Hills-Hillcrest Branch Library (completed in 2019), have been completed or are planned. These improvements are part of the 21st Century Library System/Library Department Facility Improvements Program being made in anticipation of a growing population. The recent completion of new library improvements throughout San Diego, including the recent completion of the Mission Hills-Hillcrest Branch Library indicates that San Diego libraries are currently operating within capacity. As of Fiscal Year 2019, there were 445 library employees in the City of San Diego (City of San Diego, 2019c), serving a population of approximately 1.4 million people (a ratio of 3.2 employees per 10,000 in population). Library locations are shown in Figure 3.10-1.

3.10.2.5 Parks and Recreation Facilities

The City of San Diego Parks and Recreation Department is responsible for the management of 42,263 acres of park land, joint use, and open space. Regional parks include Balboa Park (1,172 acres), Mission Bay (4,235 acres), Mission Trails Regional Park (9,800 acres), and Otay Valley Regional Park (2,029 acres). The department also manages 13 miles of shoreline parks (including 65 view areas), the San Diego-La Jolla Underwater Park (5,977 acres of ocean bottom and tidelands), 58 recreation centers, 3 municipal golf courses, and 13 city pools (San Diego Parks and Recreation Department, 2020). Figure 3.10-1 shows parks located within the ROI.

As discussed in Section 3.4, Land Use, the community plan strategy for parkland is to plan new parks to support future population growth with one park within the Dutch Flats Urban Village and two parks within the Sports Arena Community Village (Table 3.4-2). Due to limited land availability, the community plan also proposes a significant amount of linear park equivalents along streets in the form of landscaped jogging or separate bike path, seating, trash receptacles, and other improvements. These linear park elements are intended to create a contiguous network of safe pedestrian and bike paths through the Dutch Flats and Sports Arena villages. Even with full implementation of the community plan, the usable park acreage within the plan area is targeted to be 29.88 acres. The standard population-based requirement for the community would be 79.13 acres, so the community plan has a shortfall of 49.27 acres. New developments are required to either provide the required parkland commensurate with any increase in residents as part of their project or contribute to acquisition and development of parkland elsewhere within the community.

3.10.3 Environmental Consequences

This section analyzes the magnitude of anticipated changes in demand for public services relative to recent levels of service. The No Action Alternative and Alternative 1 would not include new public-private development or add population and would not increase demand for public services. The impacts from Alternatives 2 through 5 are evaluated by estimating the extent that additional services (e.g., additional teachers at schools) would be required to maintain recent service ratios. The impacts (in terms of additional services) are compared to tax revenue that would be generated by each action alternative (as well as the enforcement of local development fee payments) to determine if impacts would be significant.

3.10.3.1 Approach to Analysis

In general, impact analysis for public services applies estimates of additional population (at full buildout) to the population to personnel ratios established in Section 3.10.2 to determine the amount of additional public services that would need to be provided so that the recent ratios remain stable given the additional population.

For public schools, the estimated number of additional students is applied to recent student-teacher ratios to calculate the number of additional teachers that would be required for the recent ratio to remain stable with the Proposed Action. For police, fire/rescue, and libraries, total population is applied to recent ratios (see Section 3.10.2), and the number of additional personnel (police officers, fire/emergency medical personnel, and library employees) required to maintain recent ratios is calculated. For parks, the City of San Diego sets a standard of 2.8 acres of parkland for every 1,000 residents (City of San Diego 2019b); therefore, the analysis calculates additional parkland required to meet this standard given estimated population increases associated with each project alternative.

Significance is determined primarily based on whether the government revenue that would be generated by the Proposed Action Alternatives would be sufficient to fund the additional public services that would be required to maintain recent ratios. If property leaves federal ownership, property owners would pay local taxes on the value of their property and would be subject to local fees and assessments to the same extent as similarly situated entities and developments within the City of San Diego. If instead development were to occur on federally owned property under a lease scenario, the developer’s possessory interest in federal land and improvements thereto would likely be taxable in accordance with the Constitution of the State of California and laws enacted thereunder. Other local fees and assessments would only apply in this latter scenario to the extent the Navy were to enter into an agreement with the City granting the City this authority over the private development on federal land. Under both scenarios, the NAVWAR building and underlying real property will not be subject to state or local taxation, nor to any other state or local fees or assessments. If government revenue would be sufficient to fund the additional services, then the impact is considered less than significant. If government revenue would not be sufficient to fund the additional services, then the impact is considered significant. Some additional consideration is given to capacity at public schools, whereby if the additional students associated with an action alternative would lead to a condition of overcapacity in schools, that would be considered a significant impact. Significance for parks is determined based on whether an action alternative would be in accordance with city planning standards and establish the amount of additional parkland called for given the estimated population increase.

Earlier years of residential development (2026 to 2049) would have lower population levels than those analyzed in this section but would have similar significance determinations because as population would increase, associated tax revenue would increase in a similar trend. Impacts in year 2050 represent a maximum impact scenario because prior years would include tax revenue from construction that would not be available to fund public services when all construction would be completed in 2050 and no associated construction-related revenue would accrue to governments.

As indicated in Section 3.5.3, there would not be a permanent population increase in the region because of project-related construction. Therefore, impacts presented in this section are primarily associated with the residential units that would be developed in Alternatives 2, 3, 4, and 5.

3.10.3.2 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur and there would be no induced population growth that would lead to impacts on public services. Therefore, no impacts to public services would occur with implementation of the No Action Alternative.

3.10.3.3 Alternative 1: NAVWAR-Only Redevelopment

Neither construction nor operations associated with Alternative 1 would increase the permanent population in the ROI. Because there would not be a permanent population increase, no additional public services personnel or facilities would be required. There would, however, be some tax revenue generated by construction that could be used to fund public services with no associated population increase, which could be marginally beneficial to levels of service. Therefore, impacts to public services under Alternative 1 would be beneficial.

3.10.3.4 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

The impact analysis for Alternative 2, which indicates that government revenue would cover costs associated with additional public service personnel, utilized information on tax revenue generation estimated in Section 3.5, *Socioeconomics*. That section indicates that on an annual basis, 2050 forward, Alternative 2 would generate $15.9 million in combined city and county tax revenue. That figure represents approximately $398,000 per additional public service provider calculated below in this section, which would more than cover salaries and benefits. Furthermore, state revenue generation under Alternative 2 is estimated to be approximately $38 million per year, which, along with developer impact fees, would cover costs associated with Alternative 2 contributions to the need for potential new public services infrastructure.

Public Schools

As shown in Table 3.10-5, Alternative 2 would generate an estimated additional 205 students in grades K-5, 125 students in grade 6-8, and 145 students in grades 9-12. To maintain current student-teacher ratios at public schools in the ROI, area schools would need approximately 9.8 additional teachers for grades K-5, 6.0 teachers for grades 6-8, and 8.4 teachers for grades 9-12 (a total of 24.2 additional teachers by the year 2050).

Table 3.10-5 Additional Students and Required Additional Teachers to Maintain Current Student-Teacher Ratios, Steady State, 2050 Forward

Grades	*Additional Students*	*Student-Teacher Ratios*	*Additional Teachers Required*[1]
Grades K-5	205	20.9	10
Grades 6-8	125	21.0	6
Grades 9-12	145	17.3	8
Grades K-12 (Total)	**475**	**19.4**	**24**

Note: [1] Rounded to the nearest whole number.

Table 3.10-6 utilizes data on remaining capacity at schools from Table 3.10-3 in conjunction with data from Table 3.10-5 to show the remaining capacity at schools under Alternative 2. With the additional students associated with Alternative 2, local schools would have remaining capacity for 334 students in grades K-5, 603 students in grades 6-8, and 353 students in grades 9-12.

Table 3.10-6 Capacity for Additional Students, Steady State, 2050 Forward

Remaining Capacity	*Grades K-5*	*Grades 6-8*	*Grades 9-12*
Current Remaining Capacity (2017-2018)	539	728	498
Additional Students with Alternative 2	205	125	145
Remaining Capacity with Alternative 2	**334**	**603**	**353**

Under Alternative 2, approximately 24 additional teachers would be required by 2050 to accommodate the estimated influx of 475 new students and maintain current student-teacher ratios; however, substantial capacity remains at area schools to accommodate the additional students and teachers, and additional school district expenses would be covered by increased tax revenues and developer fees (under California Senate Bill 50). Therefore, Alternative 2 would result in less than significant impacts to public schools.

Police

Based on the population growth estimates under Alternative 2 (9,480 in additional population by 2050), the Police Department's Western Division would require an additional 7 officers by 2050 to maintain the current ratio of 1 officer per 1,284 citizens. The costs associated with additional police resources would be covered by the additional tax revenues, as well as pertinent development impact fees. The San Diego Police Department has also recommended that the Navy work with the city departments to ensure that response times are not substantially affected by the new development (City of San Diego, 2020b). Therefore, impacts to police services under Alternative 2 would be less than significant.

Fire-rescue

Based on the population growth estimates under Alternative 2 (9,480 in additional population by 2050), the city's Fire-rescue Department would require an estimated 6 additional uniformed fire/emergency medical personnel by 2050 to maintain the current ratio of 1 uniformed personnel per 1,570 citizens. The costs associated with additional fire-rescue resources would be covered by the additional tax revenues and development impact fees; therefore, impacts to fire-rescue services under Alternative 2 would be less than significant.

Libraries

Based on the population growth estimates under Alternative 2 (9,480 in new population by 2050), the City of San Diego would require an additional 3 employees by 2050 to maintain the current ratio of 3.2 employees per 10,000 in population. The costs associated with additional library resources would be covered by the additional tax revenues, as well as pertinent City of San Diego development impact fees. Recent new library projects, and associated existing capacity, indicate that new library space would not be required specifically to meet demands generated by this alternative. Therefore, impacts to library services under Alternative 2 would be less than significant.

Parks

The City of San Diego's standard of providing 2.8 acres of parkland for every 1,000 residents and the anticipated Alternative 2 population increase of 9,480 persons by 2050 suggests that an additional 26.54 acres of parkland would be required to meet the city's parkland to population ratio. This ratio would not apply if property stays in federal ownership. However, if property transfers out of federal ownership, the transferee would be responsible to meet City standards. Alternative 2 provides 18.00 acres of parkland, leaving a deficit of 8.54 acres. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Impacts to parks under Alternative 2 would be less than significant.

3.10.3.5 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

The impact analysis for Alternative 3, which indicates that government revenue would cover costs associated with additional public service personnel, utilized information on tax revenue generation estimated in Section 3.5, *Socioeconomics*. That section indicates that on an annual basis, 2050 forward, Alternative 3 would generate $10.6 million in combined city and county tax revenue. That figure represents approximately $408,000 per additional public service provider calculated below in this section, which would more than cover salaries and benefits. Furthermore, state revenue generation under Alternative 3 is estimated to be approximately $25 million per year, which, along with developer impact fees, would cover costs associated with Alternative 3 contributions to the need for potential new public services infrastructure.

Public Schools

Table 3.10-7 shows additional students that would be associated with Alternative 3, current student-teacher ratios, and the number of additional teachers that would be required to maintain current student-teacher ratios. To maintain current student-teacher ratios and given an additional 136 students in grades K-5, an additional 84 students in grades 6-8, and an additional 97 students in grades 9-12, approximately 6.5 additional teachers for grades K-5 would be required, 4.0 additional teachers would be required for grades 6-8, and an additional 5.6 teachers in grades grade 9-12 would be required (a total of 16.1 additional teachers by the year 2050).

Table 3.10-7 Additional Students and Required Additional Teachers to Maintain Current Student-Teacher Ratios, Steady State, 2050 Forward

Grades	*Additional Students*	*Student-Teacher Ratios*	*Additional Teachers Required[1]*
Grades K-5	136	20.9	6
Grades 6-8	84	21	4
Grades 9-12	97	17.3	6
Grades K-12 (Total)	**317**	20.9	**16**

Note: [1] Rounded to the nearest whole number.

Table 3.10-8 utilizes data on remaining capacity at schools from Table 3.10-3 in conjunction with data from Table 3.10-7 to show remaining capacity at schools under Alternative 3. Table 3.10-11 indicates that with the additional students associated with Alternative 3, there would be substantial remaining capacity at all grade levels at potentially affected schools—remaining capacity of 403 students for grades K-5, remaining capacity for 644 students for grades 6-8, and remaining capacity for 401 students for grades 9-12.

Table 3.10-8 Capacity for Additional Students, Steady State, 2050 Forward

Remaining Capacity	*Grades K-5*	*Grades 6-8*	*Grades 9-12*
Current Remaining Capacity (2017-2018)	539	728	498
Additional Students with Alternative 3	136	84	97
Remaining Capacity with Alternative 3	**403**	**644**	**401**

Under Alternative 3 there would be additional students and additional teachers would be required to maintain current student-teacher ratios; however, there would remain substantial capacity for more students and additional tax revenues and developer fees (under California Senate Bill 50) would cover additional expenses. Therefore, Alternative 3 would result in less than significant impacts to schools.

Police

The recent ratio of population to police officers for the San Diego Police Department's Western Division (1 sworn officer per 1,284 in population) is calculated above in Section 3.10.2.2. Based on population growth estimates (6,320 in additional population by 2050), the estimate of additional police officers that would be required over time to maintain the recent ratio under Alternative 3 would reach 5 additional uniformed officers, with that number required starting around 2050 and continuing in a steady state for the foreseeable future. The costs associated with additional police resources would be covered by the additional tax revenues as well as pertinent development impact fees. The San Diego Police Department has also recommended that the Navy work with the city departments to ensure that response times are not substantially affected by the new development (City of San Diego, 2020b). Therefore, impacts to police services under Alternative 3 would be less than significant.

Fire-rescue

The recent ratio of population to uniformed fire/emergency medical personnel for San Diego County (1 uniformed personnel per 1,570 in population) is calculated above in Section 3.10.2.3. Based on population growth estimates (6,320 in additional population by 2050), an estimated 4 additional uniformed fire/emergency medical personnel that would be required over time to maintain the recent ratio under Alternative 3. The costs associated with additional fire-rescue resources would be covered by the additional tax revenues as well as pertinent development impact fees; therefore, impacts to fire-rescue services would be less than significant.

Libraries

Based on the population growth estimates under Alternative 3 (6,320 in new population by 2050), the City of San Diego would require 1 additional employee by 2050 to maintain the current ratio of 3.2 employees per 10,000 in population. The costs associated with additional library resources would be covered by the additional tax revenues, as well as pertinent development impact fees. Recent new library projects, and associated existing capacity, indicate that new library space would not be required specifically to meet demands generated by this alternative. Therefore, impacts to library services under Alternative 3 would be less than significant.

Parks

The City of San Diego's standard of providing 2.8 acres of parkland for every 1,000 residents and the anticipated Alternative 3 population increase of 6,320 persons by 2050 suggests that an additional 17.70 acres of parkland would be required to meet the city's parkland to population ratio. This ratio would not apply if property stays in federal ownership. However, if property transfers out of federal ownership, the transferee would be responsible to meet City standards. Alternative 3 provides 13.50 acres of parkland, leaving a deficit of 4.20 acres. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Impacts to parks under Alternative 3 would be less than significant.

3.10.3.6 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

The impact analysis for Alternative 4, which indicates that government revenue would cover costs associated with additional public service personnel, utilized information on tax revenue generation estimated in Section 3.5, *Socioeconomics*. That section indicates that on an annual basis, 2050 forward, Alternative 4 would generate $24.1 million in combined city and county tax revenue. That figure represents approximately $389,000 per additional public service providers calculated in this section, which would more than cover salaries and benefits. Furthermore, state revenue generation under Alternative 4 is estimated to be approximately $57 million per year, which, along with developer impact fees, would cover costs associated with Alternative 4 contributions to the need for potential new public services infrastructure.

Public Schools

Table 3.10-9 shows additional students that would be associated with Alternative 4, current student-teacher ratios, and the number of additional teachers that would be required to maintain current student-teacher ratios. To maintain current student-teacher ratios and given an additional 310 students in grades K-5, an additional 190 students in grades 6-8, and an additional 220 students in grades 9-12, approximately 14.8 additional teachers for grades K-5 would be required, 9.0 additional teachers for grades 6-8 would be required, and an additional 12.7 teachers for grades 9-12 would be required (a total of 36.6 additional teachers by the year 2050).

Table 3.10-9 Additional Students and Required Additional Teachers to Maintain Current Student-Teacher Ratios, Steady State, 2050 Forward

Grades	*Additional Students*	*Student-Teacher Ratios*	*Additional Teachers Required[1]*
Grades K-5	310	20.9	15
Grades 6-8	190	21	9
Grades 9-12	220	17.3	13
Grades K-12 (Total)	**720**	**19.4**	**37**

Note: [1] Rounded to the nearest whole number.

Table 3.10-10 utilizes data on remaining capacity at schools from Table 3.10-3 in conjunction with data from Table 3.10-9 to show remaining capacity at schools under Alternative 4. Table 3.10-10 indicates that with the additional students associated with Alternative 4, there would be substantial remaining capacity at all grade levels at potentially affected schools—remaining capacity of 229 students for grades K-5, remaining capacity for 538 students for grades 6-8, and remaining capacity for 278 students for grades 9-12.

Table 3.10-10 Capacity for Additional Students, Steady State, 2050 Forward

Remaining Capacity	*Grades K-5*	*Grades 6-8*	*Grades 9-12*
Current Remaining Capacity (2017-2018)	539	728	498
Additional Students with Alternative 4	310	190	220
Remaining Capacity with Alternative 4	**229**	**538**	**278**

Under Alternative 4 there would be additional students and additional teachers would be required to maintain current student-teacher ratios; however, there would remain substantial capacity for more students and additional tax revenues and developer fees (under California Senate Bill 50) would cover additional expenses. Therefore, Alternative 4 would result in less than significant impacts to schools.

Police

The recent ratio of population to police officers for the San Diego Police Department's Western Division (1 sworn officer per 1,284 in population) is calculated above in Section 3.10.2.2. Based on population growth estimates (14,364 in additional population by 2050), the estimate of additional police officers that would be required over time to maintain the recent ratio under Alternative 4 would reach 11 additional uniformed officers, with that number required starting around 2050 and continuing in a steady state for the foreseeable future. The costs associated with additional police resources would be covered by the additional tax revenues as well as pertinent development impact fees. The San Diego Police Department has also recommended that the Navy work with the city departments to ensure that response times are not substantially affected by the new development (City of San Diego, 2020b). Security services at the new transit center would be conducted by transit police (not the San Diego Police Department) who are currently stationed at the Old Town Transit Center. Therefore, impacts to police services under Alternative 4 would be less than significant.

Fire-rescue

The recent ratio of population to uniformed fire/emergency medical personnel for San Diego County (1 uniformed personnel per 1,570 in population) is calculated above in Section 3.10.2.3. Based on population growth estimates (14,364 in additional population by 2050), an estimated 9 additional uniformed fire/emergency medical personnel that would be required over time to maintain the recent ratio under Alternative 4. There would also be a marginal increase in fire-rescue services needed due to the new transit center; however, most services would be a replacement of services currently provided to the Old Town Transit Center. The costs associated with additional fire-rescue resources would be covered by the additional tax revenues as well as pertinent development impact fees. Therefore, impacts to fire-rescue services would be less than significant.

Libraries

Based on the population growth estimates under Alternative 4 (14,364 in new population by 2050), the City of San Diego would require an additional 5 employees by 2050 to maintain the current ratio of 3.2 employees per 10,000 in population. The costs associated with additional library resources would be covered by the additional tax revenues, as well as pertinent development impact fees. Recent new library projects, and associated existing capacity, indicate that new library space would not be required specifically to meet demands generated by this alternative. Therefore, impacts to library services under Alternative 4 would be less than significant.

Parks

The City of San Diego's standard of providing 2.8 acres of parkland for every 1,000 residents and the anticipated Alternative 4 population increase of 14,364 persons by 2050 suggests that an additional 40.22 acres of parkland would be required to meet the city's parkland to population ratio. This ratio would not apply if property stays in federal ownership. However, if property transfers out of federal ownership, the transferee would be responsible to meet City standards. Alternative 4 provides 18.00 acres of parkland, leaving a deficit of 22.22 acres. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Impacts to parks under Alternative 4 would be less than significant.

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

The impact analysis for Alternative 5, which indicates that government revenue would cover costs associated with additional public service personnel, utilized information on tax revenue generation estimated in Section 3.5, *Socioeconomics*. That section indicates that on an annual basis, 2050 forward, Alternative 5 would generate $19.3 million in combined city and county tax revenue. That figure represents approximately $394,000 per additional public service provider calculated in this section, which would more than cover salaries and benefits. Furthermore, state revenue generation under Alternative 5 is estimated to be approximately $46 million per year, which, along with developer impact fees, would cover costs associated with Alternative 5 contributions to the need for potential new public services infrastructure.

Public Schools

Table 3.10-11 shows additional students that would be associated with Alternative 5, current student-teacher ratios, and the number of additional teachers that would be required to maintain current student-teacher ratios. To maintain current student-teacher ratios and given an additional 248 students in grades K-5, an additional 152 students in grades 6-8, and an additional 176 students in grades 9-12, approximately 11.9 additional teachers would be required for grades K-5, 7.2 additional teachers would be required for grades 6-8, and an additional 10.2 teachers would be required for grades 9-12 (a total of 29.3 additional teachers by the year 2050).

Table 3.10-11 Additional Students and Required Additional Teachers to Maintain Current Student-Teacher Ratios, Steady State, 2050 Forward

Grades	*Additional Students*	*Student-Teacher Ratios*	*Additional Teachers Required[1]*
Grades K-5	248	20.9	12
Grades 6-8	152	21	7
Grades 9-12	176	17.3	10
Grades K-12 (Total)	**576**	**19.4**	**29**

Note: [1] Rounded to the nearest whole number.

Table 3.10-12 utilizes data on remaining capacity at schools from Table 3.10-3 in conjunction with data from Table 3.10-11 to show remaining capacity at schools under Alternative 5. Table 3.10-12 indicates that with the additional students associated with Alternative 5, there would be substantial remaining capacity at all grade levels at potentially affected schools–remaining capacity of 291 students for grades K-5, remaining capacity for 576 students for grades 6-8, and remaining capacity for 322 students for grades 9-12.

Table 3.10-12 Capacity for Additional Students, Steady State, 2050 Forward

Remaining Capacity	*Grades K-5*	*Grades 6-8*	*Grades 9-12*
Current Remaining Capacity (2017-2018)	539	728	498
Additional Students with Alternative 5	248	152	176
Remaining Capacity with Alternative 5	**291**	**576**	**322**

Under Alternative 5 there would be additional students and additional teachers would be required to maintain current student-teacher ratios; however, there would remain substantial capacity for more students and additional tax revenues and developer fees (under California Senate Bill 50) would cover additional expenses. Therefore, Alternative 5 would result in less than significant impacts to schools.

Police

The recent ratio of population to police officers for the San Diego Police Department's Western Division (1 sworn officer per 1,284 in population) is calculated above in Section 3.10.2.2. Based on population growth estimates (11,491 in additional population by 2050), the estimate of additional police officers that would be required over time to maintain the recent ratio under Alternative 5 would reach 9 additional uniformed officers, with that number required starting around 2050 and continuing in a steady state for the foreseeable future. The costs associated with additional police resources would be covered by the additional tax revenues as well as pertinent development impact fees. The San Diego Police Department has also recommended that the Navy work with the city departments to ensure that response times are not substantially affected by the new development (City of San Diego, 2020b). Security services at the new transit center would be conducted by transit police (not the San Diego Police Department) who are currently stationed at the Old Town Transit Center. Therefore, impacts to police services under Alternative 5 would be less than significant.

Fire-rescue

The recent ratio of population to uniformed fire/emergency medical personnel for San Diego County (1 uniformed personnel per 1,570 in population) is calculated above in Section 3.10.2.3. Based on population growth estimates (11,491 in additional population by 2050), an estimated 7 additional uniformed fire/emergency medical personnel that would be required over time to maintain the recent ratio under Alternative 5. There would also be a marginal increase in fire-rescue services needed due to the new transit center; however, most services would be a replacement of services currently provided to the Old Town Transit Center. The costs associated with additional fire-rescue resources would be covered by the additional tax revenues as well as pertinent development impact fees; therefore, impacts to fire-rescue services would be less than significant.

Libraries

Based on the population growth estimates under Alternative 5 (11,491 in new population by 2050), the City of San Diego would require an additional 4 employees by 2050 to maintain the current ratio of 3.2 employees per 10,000 in population. The costs associated with additional library resources would be covered by the additional tax revenues as well as pertinent development impact fees. Recent new library projects, and associated existing capacity, indicate that new library space would not be required specifically to meet demands generated by this alternative. Therefore, impacts to library services under Alternative 5 would be less than significant.

Parks

The City of San Diego's standard of providing 2.8 acres of parkland for every 1,000 residents and the anticipated Alternative 5 population increase of 11,491 persons by 2050 suggests that an additional 32.18 acres of parkland would be required to meet the city's parkland to population ratio. This ratio would not apply if the property remains in federal ownership. However, if the property transfers out of federal ownership, the transferee would be responsible to meet City standards. Alternative 5 provides 18.50 acres of parkland, leaving a deficit of 13.68 acres. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Impacts to parks under Alternative 5 would be less than significant.

3.10.3.8 Summary of Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

No management practices, monitoring measures, or mitigation would be warranted for public services based on the analysis presented in Section 3.10.3.

3.10.3.9 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be less than significant impacts to public school, police, fire-rescue, library services, and parks from implementation of the No Action Alternative, Alternative 1, Alternative 2, Alternative 3, Alternative 4, and Alternative 5.

3.11 Infrastructure

The term infrastructure refers to public utilities such as potable water supply and infrastructure, sewer and wastewater infrastructure, solid waste management facilities, stormwater runoff infrastructure, electricity supply and infrastructure, natural gas supply and infrastructure, and telecommunications infrastructure. This section addresses stormwater infrastructure; stormwater runoff volumes and flow are described in Section 3.15, *Water Resources*. Transportation systems and traffic are addressed separately in Section 3.2, *Transportation*.

3.11.1 Regulatory Setting

Laws and regulations applicable to an analysis of the infrastructure include the following:

- Federal
  - Clean Water Act, 33 U.S.C. sections 1251 to 1387
  - Resource Conservation and Recovery Act, 42 U.S.C. section 6901 et seq.
  - Safe Drinking Water Act, 42 U.S.C. section 300f
  - Energy Independence and Security Act section 438
  - EO 13693, Planning for Federal Sustainability in the Next Decade
  - Antiterrorism Force Protection Standards - Instruction number 2000.16 of October 2006
  - UFC–3-201-01–Civil Engineering
  - UFC–3-210-10–Low Impact Development
- California State
  - California Water Code Sections 10910-10915
  - Title 24, California Code of Regulations, Part 5–California Plumbing Code
  - California Solid Waste Reuse and Recycling Access Act–Public Resources Code Chapter 18 section 42900
  - California Integrated Waste Management Act Public Resources Code section 40000
  - State Building Energy Efficiency Standards (California Code of Regulations Title 24 part 6)
  - California Green Building Standards Code (California Code of Regulations Title 24 part 11)
  - California Energy Commission/California Public Utilities Commission Planning
  - California Renewable Portfolio Standard
  - Assembly Bill 1826–Organic Waste Recycling
- City of San Diego
  - San Diego Municipal Code section 147.04–Water Conservation

3.11.2 Affected Environment

3.11.2.1 Region of Influence

The ROI for infrastructure systems is OTC Site 1 and OTC Site 2 and the immediately surrounding area. The ROI for infrastructure system capacities includes a larger area to encompass the existing and planned capacities of distribution infrastructure. This section characterizes the existing infrastructure systems and system capacities that will be used to evaluate potential impacts of the Proposed Action Alternatives. New construction would be subject to the Navy's established or adopted building standards and Unified Facilities Criteria (DoD, 2019a-c) and would be consistent with local requirements, as outlined in the San Diego Public Utilities Department Design Guidelines (San Diego Public Utilities Department, 2012) and existing infrastructure in the area.

3.11.2.2 Water

The City of San Diego Public Utilities Department is the water supplier for OTC and the surrounding areas. Approximately 90 percent of the San Diego region's potable water is imported, and 10 percent is supplied from water produced locally. The San Diego County Water Authority is the main wholesale supplier of water to the County of San Diego. San Diego Public Utilities Department purchases water from San Diego County Water Authority and delivers it throughout the city via a system of nine reservoirs and pipelines. The majority of the San Diego County Water Authority supply is raw water purchased from the Metropolitan Water District of Southern California. Water purchased from the San Diego County Water Authority is a blend of treated water from the Metropolitan Water District Skinner Water Treatment Plant, the San Diego County Water Authority's Twin Oaks Valley Water Treatment Plant, and the Carlsbad Desalination Plant (San Diego Public Utilities Department, 2020). Private water infrastructure must comply with the San Diego Public Utilities Water Design Guidelines (San Diego Public Utilities Department, 2012).

Both the Metropolitan Water District and San Diego County Water Authority have water supply plans to improve reliability and reduce dependence on existing imported supplies. Metropolitan Water District's Regional Urban Water Management Plan and Integrated Water Resources Plan (Metropolitan Water District, 2015), as well as the San Diego County Water Authority's 2015 Urban Water Management Plan and annual water supply report (San Diego County Water Authority, 2016). The current water supply for the entire system is 200,984-acre feet per year. Current demand is approximately 180,000-acre feet per year. The supply will be increased either through additional purchases or through conceptual additional local sources to meet the forecasted demand of 273,408-acre feet per year by the year 2040 (San Diego Public Utilities Department, 2016).

All water is treated before entering the City of San Diego's drinking water distribution system. The Alvarado Water Treatment Plant (one of three serving the city) supplies water to OTC. The Alvarado Water Treatment Plant serves the central portion of the city and has a throughput capacity of 200 million gallons per day, while the entire city system has a treatment capacity of 378 million gallons per day (San Diego Public Utilities Department, 2020). Existing throughput for the entire city service area averages approximately 160 million gallons per day. The Alvarado Water Treatment Plant accounts for about 53 percent of the city's treatment capacity. Based on this, it is estimated that daily throughput at the Alvarado Water Treatment Plant averages around 85 million gallons per day and it is currently operating well within its service capacity. Estimated peak hourly demand for NAVWAR activities represents 0.5 percent of the Alvarado Water Treatment Plant system capacity, while the estimated maximum daily demand represents 0.25 percent of the treatment system capacity.

Figure 3.11-1 shows the existing infrastructure supplying water to OTC. Existing water infrastructure in the area surrounding OTC is currently operating well within service capacity, and there are no identified infrastructure deficiencies (San Diego Public Utilities Department, 2016) These include 30-inch, 16-inch, and 12-inch water mains that run in the Pacific Highway right-of-way, a 16-inch water main in the right-of-way for Sports Arena Boulevard, and a 16-inch water main in the right-of-way for Midway Drive. The required fire demand must be supplied from at least two fire hydrants within a maximum radius of 750 feet from the fire. The fire flow duration for planning purposes is at least 5 hours, and minimum fire demands for design are 4,000 gallons per minute (DoD, 2016a). Most of the land uses in the vicinity of OTC are either commercial or industrial, which require fire flow up to 6,000 gallons per minute. The current infrastructure in the vicinity of OTC meets the minimum fire demand water requirements (San Diego Public Utilities Department, 2016). Five fire hydrants are located along Pacific Highway adjacent to

OTC Site 1, five are located southwest of OTC Site 2 along Midway Drive, and two are located northeast of OTC Site 2 along Sports Arena Boulevard.

Current potable water demand for OTC was estimated based on factors obtained from the San Diego Public Utilities Department Water Design Guidelines and the City of San Diego Urban Water Management Plan (see Section 3.11.3). The No Action Alternative estimates will be used as the baseline by which to compare project impacts in lieu of historic data, which was unavailable.

3.11.2.3 Wastewater

The San Diego Public Utilities Department operates the Metropolitan Sewerage System and the Municipal Wastewater Collection System, which comprise the sanitary sewer and wastewater treatment facilities that serve OTC and the surrounding area. The Metropolitan Sewerage System consists of a network of collection sewers and interceptors that convey wastewater from the service area to the Point Loma Wastewater Treatment Plant. Sewer mains near the project area include the 108-inch main in the Pacific Highway right-of-way, as well as a 15-inch, 12-inch and several 10-inch sewer mains connecting to OTC, as shown in Figure 3.11-2. The City of San Diego Sewer Design Guide identifies criteria for the design of sewer systems and requires preparation of a sewer planning study for new sewer facilities that demonstrates that there are no negative impacts on the existing sewer system. The current daily per capita sewer flow rate is 80 gallons per day. This represents approximately 65 percent of current potable water demand for residential use (123 gallons per capita, per day).

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

The Point Loma Wastewater Treatment Plant provides chemically enhanced primary treatment, then discharges treated wastewater to the ocean through an outfall off Point Loma. It does not provide secondary treatment prior to discharge. The Point Loma Wastewater Treatment Plant currently operates under a modified 301(h) National Pollutant Discharge Elimination System permit that allows for alternate discharge standards for total suspended solids and biochemical oxygen demand. All other discharge standards, such as toxics and bacteria, are the same as in a conventional secondary treatment permit. The city is currently exploring other options to reach secondary equivalency, such as, the Pure Water Program which would reduce the total amount of wastewater that it processes at the Point Loma Wastewater Treatment Plant.

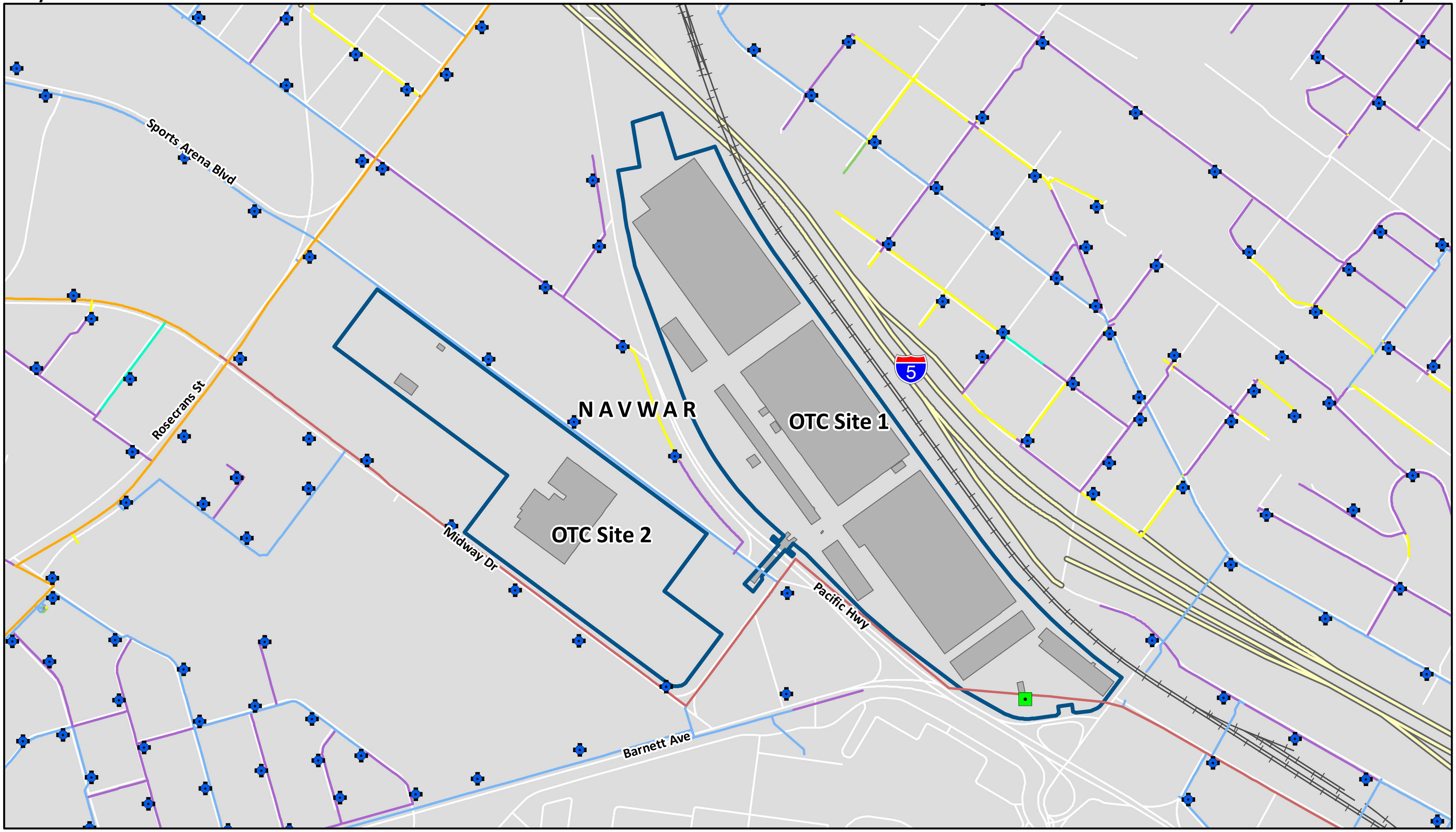
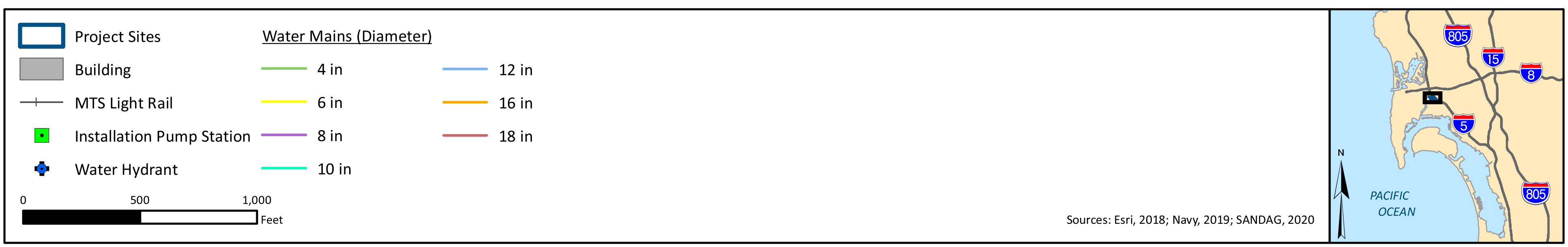


Figure 3.11-1. City of San Diego Water Utilities



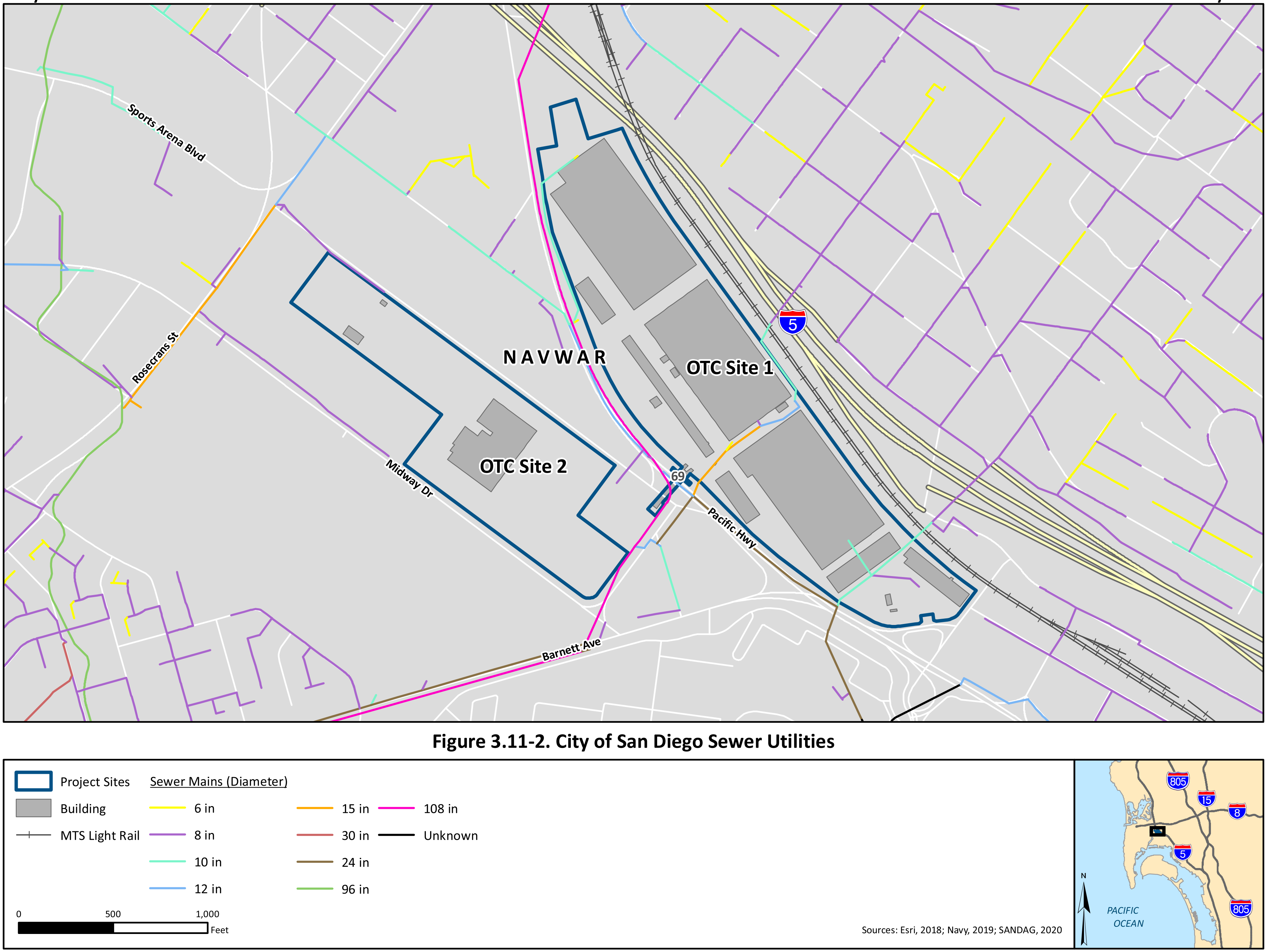


Figure 3.11-2. City of San Diego Sewer Utilities

3.11.2.4 Stormwater

Figure 3.11-3 shows the overall existing stormwater management system at OTC, including the general locations of existing storm drains, and discharges to public conveyances. More than 95 percent of OTC is impervious surface, covered by materials such as asphalt, concrete, brick, stone, and rooftops. Storm drains are located on OTC property and throughout the surrounding area, with the largest concentration occurring along the eastern boundary of OTC Site 1 adjacent to the railroad tracks. Surface runoff at OTC Site 1 primarily flows towards the northeast and discharges along the Interstate 5, while surface runoff at OTC Site 2 primarily flows towards the south. Currently stormwater infrastructure is consistent with the City of San Diego's stormwater standards and no shortfalls or infrastructure inadequacies have been identified. Stormwater runoff at OTC discharges through nine inlets into the city's stormwater system. The Naval Base Point Loma Stormwater Pollution Prevention Plan has BMPs and technologies for Navy construction projects at Naval Base Point Loma. Stormwater runoff flows, reduction, and management are discussed further in Section 3.15 (San Diego Public Utilities Department, 2018). All future stormwater infrastructure development would be subject to the Navy's established or adopted building standards and Unified Facilities Criteria (DoD, 2019a-c), consistent with drainage and floodplain regulations in the San Diego Municipal Code, as outlined in the San Diego Public Utilities Department Design Guidelines, Drainage Design Manual and Storm Water Standards Manual (San Diego Public Utilities Department, 2012).

3.11.2.5 Electricity and Natural Gas

San Diego Gas and Electric (SDG&E) Company provides electrical power and natural gas service to OTC. SDG&E purchases electrical power from generators to meet demand in its service area. According to the California Energy Commission, the total installed electrical capacity for California in 2019 was 79,845 megawatts and total generation for 2019 was 200,495 gigawatt hours. Therefore, generation accounted for about 29 percent of total capacity. Three substations serve the OTC project area: "NTCQ", Old Town, and Kettner. The Pacific Highway right-of-way contains 69-kilovolt circuits fed from the Kettner and Old Town substations (Figure 3.11-4).

The natural gas pipeline feeding the project is a 16-inch steel main line, providing natural gas at a pressure of 150 pounds per square inch. The natural gas pipeline runs along the western edge of OTC Site 1 under Pacific Highway, terminating at Witherby Street.

Total electricity demand for the SDG&E planning area is 4,024 gigawatts per hour (California Energy Commission, 2018). SDG&E performs modeling for electrical power and natural gas demand on a continual basis to manage resource portfolios and infrastructure needs (SDG&E, 2006). In cases where projects with large power loads are planned, SDG&E considers these new power loads together with other existing or anticipated future loads in the project vicinity and upgrades electrical substations or builds new substations if the capacities of existing substations are exceeded. SDG&E has programs that promote energy efficiency and use of renewable energy sources. In 2019, approximately 45 percent of the energy delivered to SDG&E customers came from renewable energy-related projects. Since 2016, electricity and gas use has declined slightly (0.5 percent and 0.6 percent, respectively) (SDG&E, 2020b).

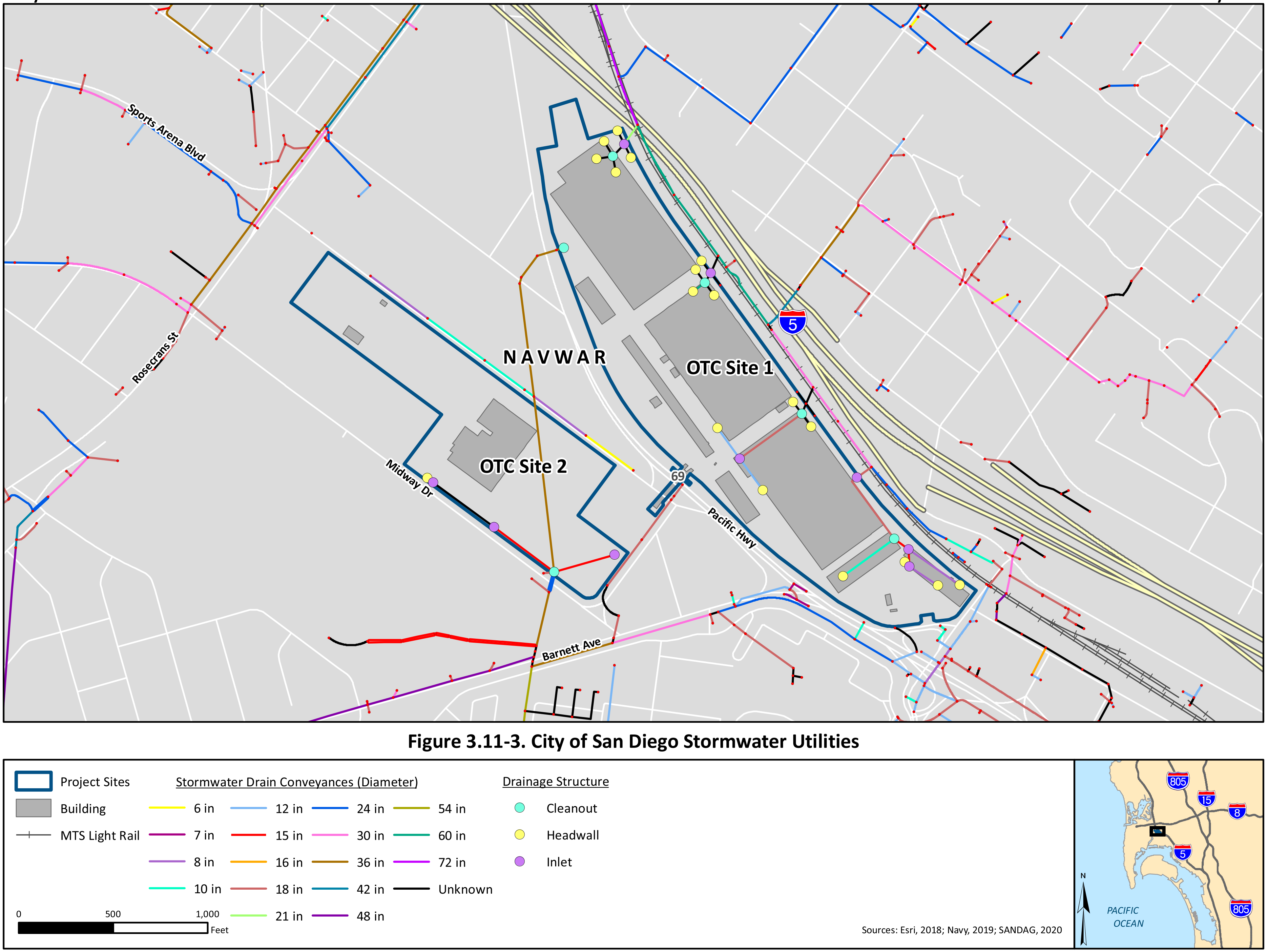


Figure 3.11-3. City of San Diego Stormwater Utilities

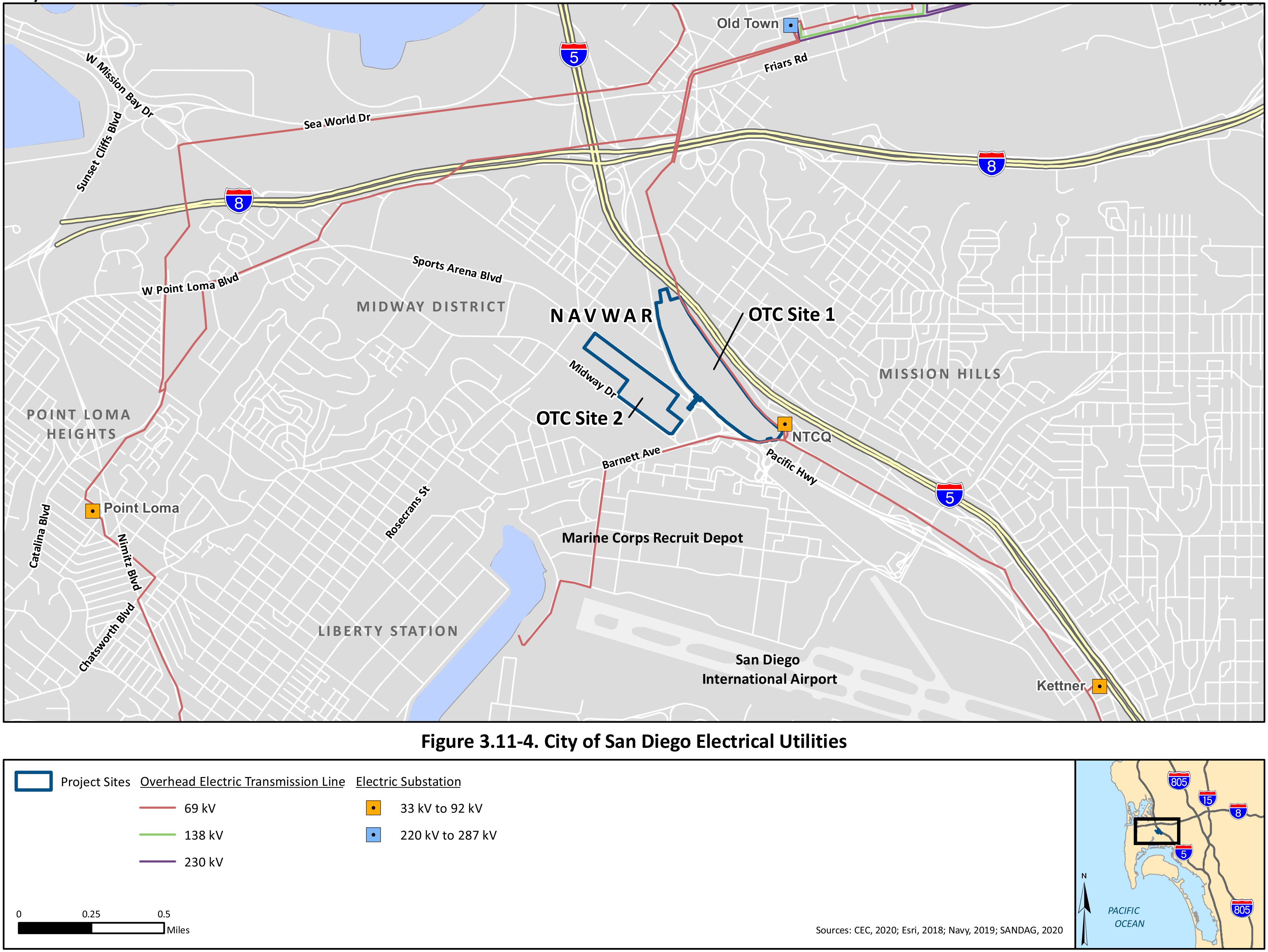


Figure 3.11-4. City of San Diego Electrical Utilities

The California Gas Report projects that commercial and industrial gas demand served by SDG&E will decrease by 0.7 percent annually, with energy efficiency outpacing economic growth. Residential gas load is likely to increase at 0.5 percent per year over the same time period due to customer growth narrowly outpacing gas energy efficiency savings. According to the report, gas demand would decline overall at an annual average rate of 0.86 percent for southern California, and 1.79 percent statewide until 2030. SDG&E projects an average annual decrease in its total annual gas throughput of 0.6 percent until 2035, primarily due to a forecasted gas-fired electric generation load decline (California Gas, 2018). Current electricity and natural gas demand for OTC was estimated based on the factors given in the California Emissions Estimator Model in the User's Guide, Appendix D Default Data Tables (California Air Pollution Officers Association, 2016) (see Section 3.11.3). The No Action Alternative estimates will be used as the baseline by which to compare project impacts in lieu of historic data, which was unavailable. There are no currently identified electricity or natural gas shortfalls in capacity or infrastructure at or surrounding OTC.

3.11.2.6 Solid Waste

Operations at OTC generate a mix of municipal solid waste, including paper, plastic, food waste, and other general refuse. Additionally, construction and demolition debris may be generated occasionally from various improvement projects. Private contractors collect solid waste generated in the project area and transport it to solid waste disposal and processing facilities within the City and County of San Diego. The Navy contracts with waste haulers for collection and disposal of operations-related solid waste. The waste haulers select which facilities to use for solid waste disposal/recycling.

Solid waste generated in San Diego County may be disposed of in three large permitted solid waste landfills: Miramar, Sycamore, and Otay. Miramar Landfill is currently the only active municipal landfill in the City of San Diego; Sycamore Landfill is located in the City of Santee, and Otay Landfill is in Chula Vista. The City of San Diego operates the Miramar Landfill, while the Otay and Sycamore Landfills are operated by a private company, Republic Services. Miramar Landfill is permitted to accept materials such as construction and demolition debris, non-friable asbestos wastes, mixed municipal wastes (general refuse), and tires. Sycamore Landfill is permitted to accept materials that include agricultural waste, asbestos, contaminated soil, mixed municipal wastes, and sludge. Otay Landfill is permitted to accept materials such as agricultural waste; construction and demolition debris; contaminated soil; industrial, inert, and mixed municipal wastes; and sludge (CalRecycle, 2020).

San Diego has a variety of transfer stations, mixed construction and demolition process facilities, materials recovery facilities, composting and mulching facilities, and recycling facilities for materials such as concrete, asphalt, rock, dirt, metal, cardboard, paper, and other materials (City of San Diego Environmental Service Department, 2015).

The maximum allowable permitted capacities for all San Diego County landfills in 2018 was 6,933,400 tons per year. Current estimates are the Miramar Landfill and Otay Landfill would remain open until 2030, and at that time, Sycamore Landfill is anticipated to receive additional solid waste. The annual capacity is expected to decrease to 3,415,000 tons in 2030 when the Otay Mesa and Miramar Landfills are estimated to close. The estimated annual disposal average in the county is approximately 3,333,042 tons per year, which is approximately half of the permitted capacity currently available. The Miramar Landfill is the closest landfill to OTC, and approximately 910,000 tons of trash (municipal solid waste and construction and demolition debris) is disposed of annually there. The maximum permitted capacity of the Miramar Landfill is 87,760,000 cubic yards, and maximum throughput is 8,000 tons per day (CalRecycle, 2020).

State goals seek to reduce organics disposal by 75 percent by 2025, which should further reduce projected average solid waste disposal in the county to 2,358,127 tons annually. The California Public Resources Code requires each city in the state to divert at least 50 percent of its solid waste from landfill disposal through source reduction, recycling, composting, and incineration of solid waste to produce heat or electricity (transformation). The City of San Diego has enacted codes and policies aimed at helping the city to achieve this diversion level, including the Refuse and Recyclable Materials Storage Regulations (Municipal Code Chapter 14, Article 2 Division 8), Recycling Ordinance (Municipal Code Chapter 6, Article 6, Division 7), and the Construction and Demolition Debris Deposit Ordinance (Municipal Code Chapter 6, Article 6, Division 6).

In general, the amount of solid waste disposed in landfills has been decreasing, while recycling has increased. Therefore, solid waste disposal is expected to remain below permitted capacity available after 2035 in the landfills that remain open at that time. The County of San Diego has sufficient permitted landfill capacity to accommodate expected solid waste disposal through the year 2052 (San Diego County Public Works Department, 2018).

3.11.2.7 Communications

Fiber optics and copper line for telecommunications are located in Pacific Highway and North Harbor Drive. Diverse feeds are located along Pacific Highway that connect to the project near Barnett Avenue and Enterprise Street. Communications service is connected from these points to serve the demand at OTC. OTC also operates its own private telecommunications hub and fiber optics loops that serve individual buildings on site.

3.11.3 Environmental Consequences

This section evaluates the magnitude of anticipated increases or decreases in public utilities and infrastructure demands considering existing demand estimates, existing management practices, and storage capacity, and evaluates recommended utilities and improvements necessary to service the Proposed Action Alternatives. Estimated demand for utilities is calculated for the Proposed Action Alternatives by applying a generation/demand factor for the new square footage to be constructed and/or the occupancy of the facilities being analyzed. Increases in demand over the current use is compared to the existing utility use at the site.

Potable water, sewer flow, electricity and natural gas demand are estimated based on occupancy or building area, and land use category or type of use. Solid waste generation is estimated based on type of use, with additional consideration of quantities of waste generated during construction and demolition. NAVWAR operations are assumed to remain at current levels during construction for all action alternatives. Appendix L includes the demand factors for each type of infrastructure and the detailed calculations for each type of infrastructure.

The current use of the site is equivalent to the No Action Alternative, so alternatives will be compared to the No Action Alternative as a reference point for increases in demand associated with the action alternatives. The results of the calculations are summarized in the following tables:

- Table 3.11-3 shows estimated water demand
- Table 3.11-4 shows estimated wastewater demand

- Table 3.11-5 shows estimated annual electricity demand
- Table 3.11-6 shows estimated annual natural gas demand
- Table 3.11-7 shows estimated solid waste construction and demolition weights
- Table 3.11-8 shows estimated solid waste weights

Table 3.11-3 Estimated Daily Water Demand by Alternative

Alternative	*NAVWAR Estimated Daily Water Requirements (GPD)*	*Public-Private Estimated Daily Water Requirements (GPD)*	*Combined–Estimated Daily Water Requirements (GPD)*	*Peak Hour Demand (GPD)*	*Maximum Daily Demand (GPD)*
No Action	159,835	0	159,835	36,629	372,415
Alternative 1	159,835	0	159,835	36,629	372,415
Alternative 2	141,080	1,361,531	1,502,611	234,783	2,494,334
Alternative 3	141,080	904,866	1,045,946	174,324	1,830,405
Alternative 4	141,080	2,041,713	2,182,793	318,324	3,274,190
Alternative 5	141,080	1,615,701	1,756,781	267,909	2,810,849

Legend: GPD = gallons per day.

Table 3.11-4 Estimated Daily Wastewater Demand by Alternative

Alternative	*Navy–Estimated Daily Wastewater Demand (GPD)*	*Private–Estimated Daily Wastewater Demand (GPD)*	*Combined–Estimated Daily Wastewater Demand (GPD)*	*Maximum Daily Demand (GPD)*
No Action	103,893	0	103,893	242,070
Alternative 1	103,893	0	103,893	242,070
Alternative 2	91,702	884,995	976,697	1,621,317
Alternative 3	91,702	588,163	679,865	1,189,763
Alternative 4	91,702	1,327113	1,418,815	2,128,224
Alternative 5	91,702	1,050,206	1,141,907.65	1,827,052

Legend: GPD = gallons per day.

Table 3.11-5 Estimated Annual Electricity Demand by Alternative

Alternative	*Navy–Estimated Annual Electricity Demand (MWhr)*	*Private–Estimated Annual Electricity Demand (MWhr)*	*Combined–Estimated Annual Electricity Demand (MWhr)*
No Action	11,143	0	11,143
Alternative 1	11,143	0	11,143
Alternative 2	14,077	47,687	61,764
Alternative 3	14,077	31,514	45,591
Alternative 4	14,077	68,307	82,384
Alternative 5	14,077	53,435	67,511

Legend: MWhr = megawatts per hour.

Table 3.11-6 Estimated Annual Natural Gas Demand by Alternative

Alternative	*Navy–Estimated Annual Natural Gas Demand (MMBtu)*	*Private–Estimated Annual Natural Gas Demand (MMBtu)*	*Combined–Estimated Natural Gas Demand (MMBtu)*	*Combined–Estimated Natural Gas Demand (mcf)*
No Action	14,422	0	14,422	13,921
Alternative 1	14,422	0	14,422	13,921
Alternative 2	19,360	94,349	113,709	109,758
Alternative 3	19,360	61,719	81,079	78,262
Alternative 4	19,360	134,830	154,190	148,832
Alternative 5	19,360	106,994	126,354	121,963

Legend: MMBtu = million metric British Thermal Units; mcf = thousand cubic feet.

Table 3.11-7 Estimated Solid Waste Construction and Demolition Debris Weight by Alternative

Alternative	*Generated Debris (Tons)*	*Landfill Disposal Qty (@35% Disposal Rate) (Tons)[1]*	*% of Total Annual Landfill Disposal[2]*
No Action Alternative	2,309	808	0.09
Alternative 1	2,309	808	0.09
Alternative 2	19,341	6,769	0.75
Alternative 3	13,620	4,767	0.53
Alternative 4	27,786	9,725	1.07
Alternative 5	22,378	7,832	0.86

Legend: Qty = quantity; SF = square feet.

Notes: [1] Quantity assumes that 65% of construction and demolition debris would be recycled and/or diverted from landfill, as required by City of San Diego regulations.

[2] Quantity represents percentage of construction and demolition debris generated when compared to average annual solid waste disposal quantity at the Miramar Landfill (i.e., 910,000 tons) (City of San Diego, 2020c).

Table 3.11-8 Estimated Annual Solid Waste Weight by Alternative

Alternative	*Annual Solid Waste Generated (Tons)*	*Landfill Disposal Qty (@50% Diversion Rate) (Tons)[1]*	*% of Total Annual Landfill Disposal[2]*
No Action	5,249	2,624	0.28
Alternative 1	12,708	6,353	0.69
Alternative 2	24,476	12,238	1.34
Alternative 3	17,995	8,997	0.98
Alternative 4	33,444	16,722	1.83
Alternative 5	26,542	13,271	1.45

Legend: Qty = quantity; SF = square feet.

Notes: [1] Quantity assumes that 50% of solid waste debris would be recycled and/or diverted from landfill, as required by San Diego regulations.

[2] Quantity represents percentage of construction and demolition debris generated when compared to average annual solid waste disposal quantity at the Miramar Landfill (i.e., 910,000 tons) (City of San Diego, 2020c).

3.11.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur, and there would be no change to the existing infrastructure system or demand at the OTC. The use of existing infrastructure would continue at current levels. Utility use would remain consistent with historic demand, which does not exceed infrastructure capabilities for potable water, sewer and wastewater, solid waste, stormwater runoff, electricity, natural gas, and telecommunications. The agencies in charge of infrastructure components would continue to maintain their respective systems in accordance with normal use at OTC and currently planned demand increases in the local area. Therefore, the No Action Alternative would result in no impacts to infrastructure or utilities.

3.11.3.2 Alternative 1: NAVWAR-Only Redevelopment

Impacts to utilities and infrastructure varies by utility service area and related distribution networks. Potential impacts are discussed below according to the utility to which they apply.

Construction

Construction of Alternative 1 would not involve substantial ground disturbance or relocation of underground pipes or cables. Mainly, it would result in the reconfiguration of onsite above ground plumbing and fixtures for the conveyance of resources. Offsite public infrastructure would not need to be altered because there would be no changes to personnel numbers or types of activities being conducted at NAVWAR. The relocation and/or replacement of existing water infrastructure would be in conformance with the Navy's established or adopted building standards and Unified Facilities Criteria (DoD, 2019a-c). Reconnection to utilities would take place during off-peak hours to minimize disruption of service of the local public system.

Water

Public water utilities would not be used for construction; all water required for construction would be provided by the contractor utilizing a water service and offsite sources. Temporary potable water sources would be provided for construction workers during demolition and construction activities. NAVWAR personnel would continue to operate at OTC while construction and renovations are occurring under Alternative 1. Water for these activities would continue to be sourced through existing public infrastructure. Use of public water utilities during construction would remain below current operational levels. Current levels of water service to the project site are sufficient to support remaining operations during construction activities. The current infrastructure in the vicinity of OTC meets the minimum fire demand water requirements. Demand for water from public utilities would not be increased during construction.

Constructing new facilities on top of existing water pipelines would hinder future maintenance and/or repair. Therefore, some water pipelines may need to be relocated within the Alternative 1 footprint. If relocation is required, the replaced portion(s) of the existing pipelines would be abandoned in place or excavated during construction. To minimize any interruption of water service, reconnection of new pipelines would occur during off-peak times.

For these reasons, Alternative 1 would result in less than significant impacts to water capacity and infrastructure during construction.

Wastewater

Public wastewater utilities would not be accessed for construction use. Temporary portable toilets would be provided by private contract for construction workers during demolition and construction activities. There would be no increased use of public utilities and infrastructure related to wastewater and sewers during construction. Use of the sewer system and wastewater utilities would remain at current levels during construction. Current levels of wastewater service to the project site are sufficient to support any remaining operations during construction activities.

Rehabilitation of facilities on top of existing sewer pipelines may hinder future maintenance and/or repair. Therefore, some sewer pipelines may need to be relocated within the Alternative 1 footprint. If relocation is required, the replaced portion(s) of the existing pipelines would be abandoned in place or excavated during construction. To minimize any interruption of sewer service, reconnection of new pipelines would occur during off-peak times.

For these reasons, Alternative 1 would result in less than significant impacts to wastewater capacity and infrastructure during construction.

Stormwater

Under Alternative 1, construction would occur in accordance with provisions in the Naval Base Point Loma Stormwater Pollution Prevention Plan (see Section 3.15, *Water Resources*). BMPs and technologies would be used to manage stormwater during construction pursuant to the Naval Base Point Loma Stormwater Pollution Prevention Plan. Therefore, Alternative 1 would result in less than significant impacts to stormwater infrastructure during construction.

Electricity and Natural Gas

Diesel-powered construction equipment would be used for construction and renovation under Alternative 1. Other electrical power needs related to construction would be met through the electrical grid or through portable diesel generators in the field. Any remaining connections to electrical utilities would be limited. Natural gas or propane is not usually required for construction, but any needs during construction could be met with portable tanks. Existing electricity and natural gas utilities may need to be sourced to serve OTC staff and civilian use during construction for ongoing operations. If existing electrical or natural gas utilities are sourced during construction, use levels would be a minimal increase over current NAVWAR demand at OTC. There are no currently identified electricity or natural gas shortfalls in capacity or infrastructure at or surrounding OTC, and current levels of electrical and natural gas service to the project site are sufficient to support this potential increase during construction activities. Therefore, Alternative 1 would result in less than significant impacts to electricity and natural gas capacity and infrastructure during construction.

Solid Waste

Construction and demolition would result in generation of increased levels of solid wastes. Specific loads of construction and demolition wastes would be combined with operational wastes below to consider the maximum impact in a single year for determination of impacts to municipal solid waste disposal utilities.

Therefore, Alternative 1 would result in less than significant impacts to solid waste facilities and infrastructure during construction.

Communications

Public infrastructure related to communications would not be altered during construction. Onsite configurations of fiber optics cables could potentially be altered. New fiber optics cables and a private onsite hub would be connected to existing links in Pacific Highway which would continue to service the project. Construction would be implemented in a manner to minimize any temporary disruptions to communications infrastructure. No public infrastructure related to communications would be affected.

Therefore, Alternative 1 would result in less than significant impacts to communications capacity and infrastructure during construction.

Operations

Water

Existing water facilities in the project vicinity are currently operating well within their service capacity. Water use under Alternative 1 would be at the same level as current conditions and as described for the No Action Alternative. Alternative 1 would not add any new personnel to OTC or result in modified operations by NAVWAR once construction is complete. Alternative 1 would consume 159,835 gallons per day of water, and peak hourly flow requirements would be approximately 36,629 gallons per hour, or 610 gallons per minute (see Table 3.11-3). This represents less than 0.001 percent of San Diego supply capacity. Peak hourly demand represents less than 0.005 percent of total system delivery capacity while maximum daily demand would continue to represent 0.002 percent of the treatment system throughput capacity. Alternative 1 would not require the development of any offsite infrastructure, nor would it affect the ability of San Diego Public Utilities Department to meet its current or future obligations. Therefore, there is adequate water capacity and service for Alternative 1.

The existing laterals tapping the 12-inch San Diego Public Utilities Department water line on Sports Arena Boulevard, or the 18-inch San Diego Public Utilities Department water main along Pacific Highway could adequately serve operations under Alternative 1, providing both domestic and fire service. The water system for the project would connect to existing 18-inch/12-inch main lines at two locations; this would provide redundancy for the fire main while also serving NAVWAR activities at OTC. Water infrastructure modifications made for Alternative 1 would be consistent with local requirements, as outlined in the San Diego Public Utilities Department Water Design Guidelines (San Diego Public Utilities Department, 2012) and existing infrastructure in the area.

The fire flow requirements for Alternative 1 would be 4,000 gallons per minute. The current infrastructure in the vicinity of OTC meets the minimum fire demand water requirements. Operations under Alternative 1 would be identical to current conditions and would not exceed the current fire water demand requirement.

For these reasons, Alternative 1 operations would result in less than significant impacts to capacity and infrastructure of water systems.

Wastewater

Table 3.11-4 lists the estimated wastewater demand for Alternative 1. The City of San Diego Public Utilities Department has established daily generation rates for wastewater typically produced by various land uses. Alternative 1 land use, number of NAVWAR personnel, and type and volume of wastewater generation would not change from current conditions. The Point Loma Wastewater Treatment Plant is operating at approximately 73 percent of full capacity. In addition, existing wastewater infrastructure in the OTC area is currently operating within service capacity, and there are no identified infrastructure deficiencies. In addition, Alternative 1 would not require the development of any offsite infrastructure, nor would it affect the ability of San Diego Public Utilities Department to satisfy its current or future obligations.

For these reasons, Alternative 1 would result in less than significant impacts to capacity and infrastructure of wastewater systems.

Stormwater

Under Alternative 1, existing storm drains east and west of the site would continue to serve OTC (see Figure 3.11-3). Following construction, 95 percent of OTC would continue to be impervious or covered. Changes to the surface and topography as a result of demolition and construction may alter the route or location of drainage, but only minor changes to the overall drainage infrastructure on site would be needed because neither the overall drainage patterns nor the amount of impervious surfaces would change. Drainage infrastructure would be designed in accordance with the Naval Base Point Loma Stormwater Pollution Prevention Plan (see Section 3.15, *Water Resources*) but would convey the same amount of runoff. However, the existing discharges would be utilized for an equivalent amount of runoff to current conditions. and technologies would be applied to the construction pursuant to the Naval Base Point Loma Stormwater Pollution Prevention Plan. No upgrades or changes to the stormwater infrastructure outside of OTC would be necessary as a result of Alternative 1. Therefore, Alternative 1 would result in less than significant impacts to stormwater infrastructure.

Electricity and Natural Gas

Tables 3.11-5 and 3.11-6 list the estimated electricity and natural gas demands, respectively, for each alternative. Alternative 1 estimated electrical and natural gas demand is the same as the No Action Alternative since the number of employees would remain the same. However, due to the reduction in density within the facility and increased efficiency gained through more sustainable modern construction, fixtures and appliances, the intensity of use may actually decrease under Alternative 1, compared to current operations.

Total electrical demand for the SDG&E planning area is 4,024 gigawatts. Alternative 1 would require 11,143 megawatts per hour annually, consistent with current NAVWAR electrical demand at OTC. This represents no change from existing NAVWAR electrical usage and represents approximately 0.3 percent of current demand in the SDG&E planning area. Furthermore, electricity and gas use has declined slightly (0.5 percent and 0.6 percent, respectively) (SDG&E, 2020), so future electrical demand is anticipated to remain relatively steady. There are 69-kilovolt power lines running along north western edge of OTC, terminating at the “NTCQ” substation that provide sufficient power to serve the project loads within adjacent infrastructure feeding to the onsite substation. In addition, there are no currently identified electricity shortfalls in capacity or infrastructure at or surrounding OTC. Therefore, existing electrical capacity and distribution infrastructure would be sufficient for Alternative 1.

Total natural gas demand for the SDG&E planning area is 54,879,000 million metric British Thermal Units. Alternative 1 would require 14,422 million metric British Thermal Units annually, consistent with current NAVWAR natural gas demand at OTC. This represents no change from existing NAVWAR natural gas usage and represents approximately 0.03 percent of current natural gas demand for the SDG&E planning area. Furthermore, electricity and gas use has declined slightly (0.5 percent and 0.6 percent, respectively) (SDG&E, 2020), so future electrical demand is anticipated to remain relatively steady. In addition, there are no currently identified natural gas shortfalls in capacity or infrastructure at or surrounding OTC. Therefore, existing natural gas capacity and distribution infrastructure would be sufficient for Alternative 1.

Therefore, Alternative 1 would result in less than significant impacts to capacity and infrastructure of electricity and natural gas.

Solid Waste

Alternative 1 would generate an estimated 28,526 tons of total construction and demolition debris. According to City of San Diego municipal codes, 65 percent of this total generated solid waste is required to be diverted from landfill disposal to recycle and reuse programs. Therefore, only 9,984 tons would be eligible to be delivered to the Miramar Landfill. Section 3.7, *Hazardous Materials and Waste* provides additional information on the diversion of the construction and demolition debris from the landfill. Under operations, Alternative 1 would generate approximately 7,500 tons of solid waste annually, of which 3,700 tons would be sent to the Miramar Landfill for disposal. According to San Diego Public Works Department the Miramar Landfill accepts 910,000 tons of solid waste annually. Therefore, the combined quantity of municipal solid waste generated as a result of Alternative 1 would represent about 1.5 percent of average annual solid waste accepted to Miramar Landfill if all construction waste was combined with 1 year of annual waste. However, construction and demolition would take place over several years, so the actual amounts delivered to landfills each year are expected to be lower. Additionally, the average annual contribution of solid waste to Miramar, after construction has been completed, would only represent about 0.4 percent of total solid waste delivered annually to the Miramar Landfill. Furthermore, this would only represent 0.1 percent of permitted throughput capacity.

Therefore, Alternative 1 would result in less than significant impacts to the capacity and infrastructure of municipal solid waste facilities serving the project area.

Communications

Fiber optics and copper lines for telecommunications are located in the rights-of-way for Pacific Highway and North Harbor Drive. Diverse feeds are located along Pacific Highway that connect to the project near Barnett Avenue and Enterprise Street. New communication service would be connected from these points to serve the demand from the project; however, demand would increase because NAVWAR operations would remain the same. NAVWAR would construct or use the existing private telecommunications hub and fiber optics loops to serve individual buildings at the project site. The telecommunications at OTC would be configured to address Antiterrorism Force Protection standards and cyber security.

Therefore, Alternative 1 would result in less than significant impacts to communications infrastructure.

3.11.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Construction

The types of construction impacts would be similar to those described under Alternative 1, but the construction would be more extensive, and the construction use would be longer. Construction phasing for Alternative 1 is 5 years, and the construction phasing for Alternative 2 is 25 years. However, water use, and wastewater generation would be similar to Alternative 1 on an annual basis. As described for Alternative 1, current levels of water and wastewater service are sufficient to support remaining operations during construction activities. In addition, the current infrastructure in the vicinity of OTC meets the minimum fire demand water requirements. Although the private development component would require a longer period, the types of infrastructure effects over a given year would be similar. Construction would still occur in accordance with provisions in the Naval Base Point Loma Stormwater Pollution Prevention Plan (see Section 3.15, *Water Resources*). BMPs and technologies would be used to manage stormwater during construction pursuant to the Naval Base Point Loma Stormwater Pollution Prevention Plan. However, the more extensive construction and longer construction period would cause a larger amount of construction and demolition waste levels for Alternative 2 in comparison to Alternative 1. Construction and demolition wastes are combined into the discussion below for a complete discussion of impacts related to solid waste disposal. Impacts related to solid waste are expected to remain less than significant.

Construction would result in reconfiguration of onsite infrastructure for the conveyance of public utilities including water, sewer, stormwater, electrical, gas and communications. Figure 3.11-5, Onsite Utilities Assumptions, gives a block-by-block representation of onsite utilities distribution for water, sewer and stormwater. The size and capacity of pipes shown are sufficient for Alternative 4, which has the highest demand for all utilities. The figure represents a maximum conceptual design. Final design would determine the exact placement and capacities for each utility. Reconnection of utilities would occur during off-peak hours to avoid disruption of service. Offsite public infrastructure would not be altered. The relocation and/or replacement of existing infrastructure would be in conformance with Navy's established or adopted building standards, and Uniform Building Codes.

For these reasons, Alternative 2 would result in less than significant impacts to capacities and infrastructure of utilities systems during construction.

Operations

Water

Alternative 2 would increase water use at OTC from 159,835 gallons per day to 1,502,611 gallons per day due to the introduction of private development in addition to NAVWAR activities (see Table 3.11-3). NAWAR water consumption would decrease due to a shift in the ratios of square footage by use type for NAVWAR's operations (see Section 2.3.1, *Description of Alternatives*). For example, the decrease in total office square footage and increase in total auditorium or conference space square footage would result in a net decrease in water usage, as office uses have a higher water demand per square foot than conference or auditorium uses. The private development accounts for 1,361,531 gallons per day of added water consumption. This is mainly due to the addition of 6,600 residential units that accounts for 1,116,069 gallons per day. Due to the number of residential units and the overall increase in potable water demand, the San Diego Public Utilities Department would be required to determine whether the water demands of the proposed project are accounted for in the Urban Water Management Plan and to complete a Water Supply Assessment for the project.

The current water supply in the Urban Water Management Plan is reported as 200,984-acre feet per year for 2020, increasing to 273,408 by 2040 and beyond. Alternative 2 would increase demand for the project area from 0.001 percent to 0.8 percent of the total current water supply and 0.6 percent of future water supply. Estimated maximum daily demand represents 1.2 percent of the Alvarado Water Treatment Plant daily system delivery capacity while the peak hourly rate could account for 2.8 percent of hourly system delivery capacity from the Alvarado Water Treatment Plant. Furthermore, the increase represents approximately 6.4 percent of the current remaining supply capacity, or 1.6 percent of remaining capacity under the projected 2040 supply capacity estimate.

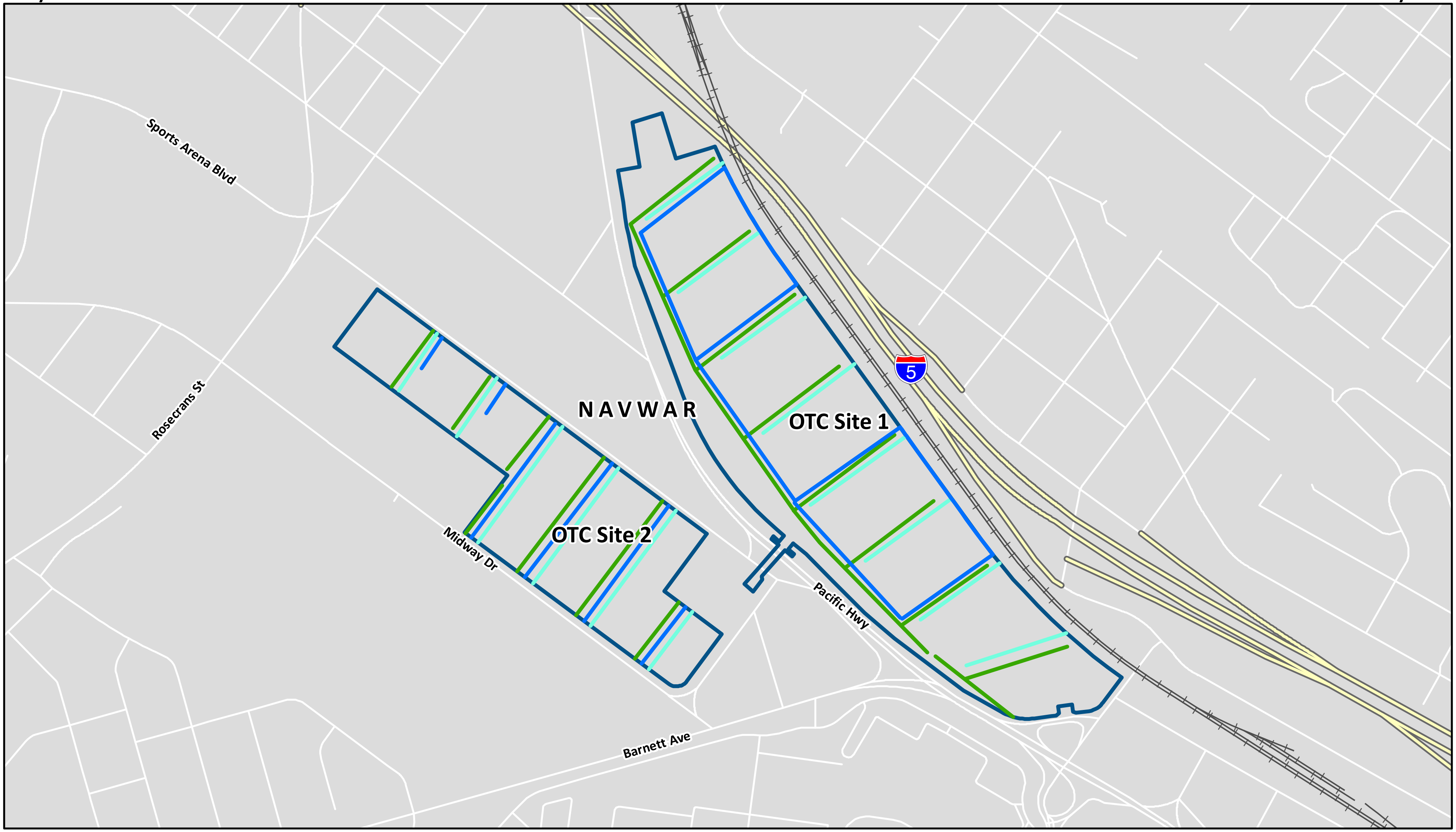
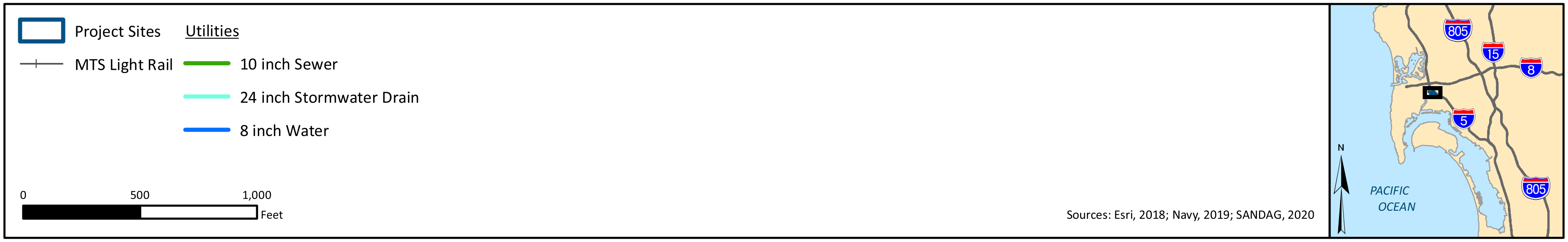


Figure 3.11-5. OTC Onsite Utilities Assumptions



The fire flow requirements for Alternative 2 would be the same as those described Alternative 1 and would not exceed the current fire water demand requirement.

Existing water infrastructure in the OTC area is currently operating well within service capacity, and there are no identified infrastructure deficiencies (San Diego Public Utilities Department, 2016). The existing laterals tapping the 12-inch San Diego Public Utilities Department water line on Sports Arena Boulevard, or the 18-inch San Diego Public Utilities Department water main along Pacific Highway could adequately serve the proposed Alternative 2, providing both domestic and fire service. The water system for the project would connect to existing 18-inch/12-inch main lines at two locations to provide redundancy for the fire main, as well as the new buildings. Additional water infrastructure improvements may be necessary pending future coordination with the San Diego Public Utilities Department. Water infrastructure modifications made for Alternative 2 would be consistent with local requirements and existing infrastructure in the area.

Alternative 2 would not require the modification or development of new public infrastructure but may result in the use of a substantial portion of remaining capacity. Although it appears that there is sufficient water supply capacity to serve Alternative 2, a Water Supply Assessment would be required by the San Diego Public Utilities Department prior to project implementation to determine the extent of potential water demand increases and necessary infrastructure updates. The San Diego Public Utilities Department would use this assessment to determine whether adequate supply exists to serve Alternative 2 without affecting their ability to fulfill existing and future obligations.

Therefore, Alternative 2 would result in less than significant impacts to water utilities.

Wastewater

The highest rates of wastewater generation (gallons per day) would be expected to remain below the water demand which rises significantly for Alternative 2 compared to Alternative 1. Alternative 2 would result in an increase of 976,679 million gallons per day (see Table 3.11-5). This represents 0.4 percent of the 240 million gallons per day capacity of the Point Loma Wastewater Treatment Plant. The plant is operating at approximately 73 percent of full capacity, so wastewater volumes associated with Alternative 2 would be well within system capacity.

Existing wastewater infrastructure in the OTC area is currently operating within service capacity, and there are no identified infrastructure deficiencies (San Diego Public Utilities Department, 2014). The density of uses proposed by Alternative 2 would increase the amount of wastewater conveyed through existing sewer facilities. However, the additional wastewater would not exceed system capacity of the public utility. It is assumed that Alternative 2 would make new sewer line connections at OTC to connect to the existing municipal sewer system to accommodate the new and modified buildings under Alternative 2. No changes to offsite infrastructure would need to occur. The City of San Diego Sewer Design Guide identifies criteria for the design of sewer systems and requires preparation of a sewer planning study for new sewer facilities that demonstrates that there are no negative impacts on the existing sewer system. The modified system would be designed in accordance with these standards to provide adequate infrastructure (e.g., pipelines) to handle the expected wastewater associated with Alternative 2.

For these reasons, Alternative 2 would result in less than significant impacts to capacity and infrastructure of wastewater systems.

Stormwater

Under Alternative 2, impacts to storm drainage would be similar to those described under Alternative 1 due to the fact that 95 percent of the project site is currently impervious or covered. The public-private portion of Alternative 2 would likely have a similar proportion of impervious surfaces, and changes in topography would be minor and similar to Alternative 1. All modifications of existing drainage would conform to building standards and codes outlined in the Naval Base Point Loma Stormwater Pollution Prevention Plan and discussed in Section 3.15, *Water Resources*. Therefore, Alternative 2 would result in less than significant impacts to stormwater infrastructure.

Electricity and Natural Gas

As shown in Table 3.11-5, Alternative 2 total estimated electrical and natural gas demand would be 61,764 megawatts per hour, an increase from current NAVWAR electrical use at OTC (11,143 megawatts per hour). This increase of 50,621 megawatts per hour is due primarily to the private development. This represents approximately 1.3 percent of current demand in the SDG&E planning area. Electricity and gas use have declined slightly (0.5 percent and 0.6 percent, respectively) (SDG&E, 2020), so future electrical demand is anticipated to remain relatively steady. Alternative 2 would, therefore, represent an increase over existing electrical use, but the increase represents only 0.8 percent of total electrical demand in the SDG&E planning area. There are 69-kilovolt power lines running along the northwestern edge of OTC, terminating at the NTCQ substation that could provide sufficient power to serve the project loads within adjacent infrastructure feeding to the onsite substation. It is assumed that SDG&E will consider the power loads together with other existing or anticipated future loads in the project vicinity and determine if any upgrades to infrastructure or electrical substations is needed. In addition, there are no currently identified electricity shortfalls in capacity or infrastructure at or surrounding OTC. Therefore, existing electrical capacity and distribution infrastructure would be sufficient for Alternative 2.

Total natural gas demand for the SDG&E planning area is 54,879,000 million metric British Thermal Units. Alternative 2 would require 109,758 million metric British Thermal Units annually, an increase of 95,336 million metric British Thermal Units over current NAVWAR natural gas demand at OTC. This represents approximately 0.2 percent of current natural gas demand for the SDG&E planning area. Furthermore, electricity and gas use has declined slightly (0.5 percent and 0.6 percent, respectively) (SDG&E, 2020), so future natural gas demand is anticipated to remain relatively steady. Alternative 2 would, therefore, represent a net decrease from existing natural gas use when combined with this trend. In addition, there are no currently identified natural gas shortfalls in capacity or infrastructure at or surrounding OTC. Therefore, existing natural gas capacity and distribution infrastructure, including the 16-inch steel pipeline under Pacific Highway, would be sufficient for Alternative 2.

Although Alternative 2 would result in increases in consumption of energy, it is within the planned demand increases described in the California Demand Forecast for 2018-2030 and the California Gas Report 2016. While overall energy use at the site would increase, energy intensity of use is expected to decrease due to sustainable design standards and energy saving efficiencies that would be part of final design pursuant to Navy guidelines. SDG&E delivered 45 percent renewable energy to its customers last year, well in excess of the current Renewables Portfolio Standard of California. SDG&E is expected to continue to expand its renewables portfolio in line with state goals.

For these reasons, Alternative 2 would result in less than significant impacts to capacities and infrastructure of electricity and natural gas.

Solid Waste

Alternative 2 would generate an estimated 19,341 tons of total construction and demolition debris, of which 6,770 tons would be delivered to the Miramar Landfill. It would also generate approximately 24,475 tons of solid waste annually due to operations, of which 12,238 tons would be directed towards Miramar Landfill. Therefore, the combined single year quantity of municipal solid waste generated as a result of Alternative 2 would represent about 2.1 percent of average annual solid waste accepted to Miramar Landfill if all construction waste was combined with 1 year of annual waste. However, construction and demolition are likely to take place over several years, so the actual amounts delivered to landfills each year are expected to be lower. Additionally, the average annual contribution of solid waste to Miramar, after construction has been completed, would only represent about 1.3 percent of total solid waste delivered annually to the Miramar Landfill. Furthermore, this would only represent 0.4 percent of permitted throughput capacity.

Alternative 2 would result in less than significant impacts to the capacity and infrastructure of municipal solid waste facilities serving the project area.

Communications

Impacts to communications under Alternative 2 would be similar to those described for Alternative 1. The NAVWAR redevelopment component would be identical. However, Alternative 2 includes private development in addition to the redevelopment of NAVWAR. The private development portion of Alternative 2 would contract with local providers for telecommunications service. Private service could be supplied by existing networks and would not require any upgrades to the public infrastructure to serve the project site. Therefore, implementation of Alternative 2 would result in less than significant impacts to communications infrastructure.

3.11.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Construction

Construction impacts would be similar to those described under Alternative 2, with the exception of construction and demolition waste levels which would be less. Therefore, construction of Alternative 3 would result in less than significant impacts to public utilities and infrastructure.

Operations

Operational impacts would be similar to those described under Alternative 2, however utility demands would be less, since the number of residential units added under Alternative 3 is less than what is proposed under Alternative 2. Therefore, the demand for water, wastewater, electricity and natural gas, and generation of solid waste would be less than described under Alternative 2 (refer to Tables 3.11-3 through 3.11-8). Impacts to stormwater and communications would be the same as described under Alternative 2. Therefore, operation of Alternative 3 would result in less than significant impacts to public utilities and infrastructure.

3.11.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

Construction

Construction impacts would be similar to those described under Alternative 2, with the exception of construction and demolition waste levels which would higher. Construction would result in reconfiguration of onsite infrastructure for the conveyance of public utilities including water, sewer, stormwater, electrical, gas and communications. Reconnection of utilities would occur during off-peak hours to avoid disruption of service. Figure 3.11-5, Onsite Utilities Assumptions, gives a block-by-block representation of onsite utilities distribution for water, sewer and stormwater sufficient for Alternative 4. The figure represents a conceptual design. Final design would determine the exact placement for each utility. It is assumed that offsite public infrastructure would not be altered. The relocation and/or replacement of existing infrastructure would be in conformance with Navy's established or adopted building standards, and Uniform Building Codes.

Therefore, construction of Alternative 4 would result in less than significant impacts to public utilities and infrastructure.

Operations

Water

Estimates indicate that Alternative 4 could consume 2,182,793 gallons per day of water, an increase of 2,022,958 gallons per day over current use. This is mainly due to the addition of 10,000 residential units, which could account for 1,766,772 gallons per day of this increase. Due to the number of residential units and the overall increase in potable water demand, California Water Code Sections 10910-10915 requires the San Diego Public Utilities Department to determine whether the water demands of the proposed project were accounted for in the Urban Water Management Plan or complete a Water Supply Assessment for the project.

The current water supply in the Urban Water Management Plan is reported as 200,984-acre feet per year for 2020, increasing to 273,408 by 2040 and beyond. The total project demand would account for 1.2 percent of current supply and 0.9 percent of future water supply. The peak hourly rate could account for 3.8 percent of system delivery capacity from the Alvarado Treatment Plant. Furthermore, the increase represents approximately 9.6 percent of the current remaining supply capacity, or approximately 2.4 percent of remaining capacity under the projected 2040 supply capacity estimate.

Alternative 4 would not require the modification or development of new public infrastructure, nor would it result in the use of a substantial portion of remaining capacity. Although it appears that there is sufficient water supply capacity to serve Alternative 4, a Water Supply Assessment would be required by the San Diego Public Utilities Department to determine the extent to which the project would increase water demand and how to convey available water supplies from existing entitlements and resources. Ultimately, the city would need to determine that adequate supply exists to serve Alternative 4 without affecting San Diego Public Utilities Department's ability to fulfill its existing and future obligations. These studies would also synchronize project phasing and coordinate with San Diego Public Utilities Water Department to refine the timing of the expected demand.

Therefore, Alternative 4 would result in less than significant impacts to water utilities.

Wastewater

The highest rates of wastewater generation (gallons per day) would be expected to remain below the water demand for Alternative 4. The sewage flow to Point Loma Wastewater Treatment Plant would be increased by approximately 0.6 percent of system capacity. The City of San Diego wastewater hydraulic capacity was modeled to handle the urban flows typical in the downtown area. This potential for additional wastewater would not significantly affect the quality of water discharged from the outfall, nor would it affect the ability of the city to provide secondary treatment of the wastewater. It would also not significantly affect the capacity of the treatment system.

The proposed project would relocate sewer lines and provide new connections to the existing municipal sewer system to accommodate the new and modified buildings under Alternative 4. The City of San Diego Sewer Design Guide identifies criteria for the design of sewer systems and requires preparation of a sewer planning study for new sewer facilities that demonstrates that there are no negative impacts on the existing sewer system. The modified system would be designed to provide adequate capacity to handle the expected wastewater associated with the proposed project and maintain flow conditions to ensure plumbing construction in compliance with City of San Diego Sewer Design Guide and California Plumbing Code. The implementation of new and modified sewer facilities constructed in compliance with the City's Sewer Design Guide would ensure that there would be adequate conveyance of the projected increase in wastewater flow from Alternative 4. The proposed project would not result in the construction of new local infrastructure that could cause significant environmental impacts not already addressed as part of the proposed project.

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

Therefore, Alternative 4 would result in less than significant impacts to capacities and infrastructure of wastewater and sewer systems.

Stormwater

Under Alternative 4, impacts to storm drainage would be similar to those described under Alternative 2 due to the fact that 95 percent of the project site is currently impervious or covered. The public-private portion of Alternative 4 would likely have a similar proportion of impervious surfaces, and changes in topography would be minor and similar to Alternative 2. All modifications of existing drainage would conform to building standards and codes outlined in the Naval Base Point Loma Stormwater Pollution Prevention Plan and discussed in Section 3.15, *Water Resources*.

Therefore, Alternative 4 would result in less than significant impacts to drainage infrastructure.

Electricity and Natural Gas

The estimated increase in electricity demand for Alternative 4 is related to the private development which would add 68,306 megawatts per hour. Alternative 4 would require an additional 71,406 megawatts per hour, compared to the No Action Alternative. Due to the increased efficiency of modern construction, fixtures, and appliances, in general the intensity of use per square feet of space would be expected to decrease under Alternative 4, compared to current operations.

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

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

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

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

Solid Waste

Alternative 4 would generate an estimated 27,786 tons of total construction and demolition debris, of which 9,725 tons would be delivered to the Miramar Landfill. It would also generate approximately 33,443 tons of solid waste annually due to operations, of which 16,722 tons would be directed towards Miramar Landfill. According to San Diego Public Works Department, the Miramar Landfill accepts 910,000 tons of solid waste annually. Therefore, the maximum combined quantity of municipal solid waste generated as a result of Alternative 4 would represent about 2.91 percent of average annual solid waste accepted to Miramar Landfill if all construction waste was combined with 1 year of annual waste. However, construction and demolition are likely to take place over several years, so the actual amounts delivered to landfills each year are expected to be lower. Additionally, the average annual contribution of solid waste to Miramar, after construction has been completed, would only represent about 1.8 percent of total solid waste delivered annually to the Miramar Landfill. Furthermore, this would only represent 0.6 percent of permitted throughput capacity.

Therefore, Alternative 4 would result in less than significant impacts to the capacity and infrastructure of municipal waste facilities serving the project area.

Communications

Impacts to communications under Alternative 4 would be similar to those described for Alternative 2. The NAVWAR redevelopment component of both alternatives would be identical. The private development component would be similar except that Alternative 4 would include development of a transit center. The types of communications associated with a transit center would differ from NAVWAR, residential, and commercial activities, but similar types of communications system upgrades would be required. The transit center would essentially be another form of commercial activity with respect to communications infrastructure. The types of effects to communications infrastructure would, therefore, be similar to those described for Alternative 2. Therefore, implementation of Alternative 4 would result in less than significant impacts to infrastructure related to communications.

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

Construction

Construction impacts would be similar to those described under Alternative 4, with the exception of construction and demolition waste levels which would be less. Therefore, construction of Alternative 5 would result in less than significant impacts to public utilities and infrastructure.

Operations

Operational impacts would be similar to those described under Alternative 4, however utility demands would be less, since the number of residential units added under Alternative 5 is less than what is proposed under Alternative 4. Therefore, the demand for water, wastewater, electricity and natural gas, and generation of solid waste would be less than described under Alternative 4 (refer to Tables 3.11-3 through 3.11-8). Impacts to stormwater and communications would be the same as described under Alternative 4. Therefore, operation of Alternative 5 would result in less than significant impacts to public utilities and infrastructure.

Water

Estimates indicate that Alternative 5 could consume 1,756,781 gallons per day of water. This is mainly due to the addition of 8,000 residential units, which could account for 1,413,418 gallons per day of this increase. Due to the number of residential units and the overall increase in potable water demand, California Water Code Sections 10910-10915 would require the San Diego Public Utilities Department to determine whether the water demands of the proposed project were accounted for in the Urban Water Management Plan or complete a Water Supply Assessment for the project.

The total estimated project demand would account for about 1.0 percent of current supply and 0.7 percent of future water supply. The peak hourly rate could account for 3.2 percent of system delivery capacity from the Alvarado Treatment Plant. Furthermore, the increase represents approximately 7.6 percent of the current remaining supply capacity, or 1.9 percent of remaining capacity under the projected 2040 supply capacity estimate.

Alternative 5 would not require the modification or development of new public infrastructure, nor would it result in the use of a substantial portion of remaining capacity. Although it appears that there is sufficient water supply capacity to serve Alternative 5, a Water Supply Assessment may be required by the San Diego Public Utilities Department to determine the extent to which the project would increase water demand and how to convey available water supplies from existing entitlements and resources. Ultimately, the city would need to determine that adequate supply exists to serve Alternative 5 without affecting San Diego Public Utilities Department’s ability to fulfill its existing and future obligations. These studies would also synchronize project phasing and coordinate with San Diego Public Utilities Department to refine the timing of the expected demand.

Therefore, Alternative 5 would result in less than significant impacts to water utilities.

Wastewater

Impacts to wastewater would be similar to those resulting from Alternative 4, except that use levels would be less. Wastewater generation (gallons per day) would increase compared to the No Action Alternative. The sewage flow to Point Loma Wastewater Treatment Plant would be increased by approximately 0.5 percent of system capacity. The City of San Diego wastewater hydraulic capacity was modeled to handle the urban flows typical in the downtown area. This potential for additional wastewater would not significantly affect the quality of water discharged from the outfall, nor would it affect the ability of the city to provide secondary treatment of the wastewater. It would also not significantly affect the capacity of the treatment system.

The density of uses proposed by Alternative 5 would increase the amount of wastewater conveyed through existing sewer facilities. However, Alternative 5 would not result in the construction of new local infrastructure that could cause significant environmental impacts not already addressed as part of the proposed project. Alternative 5 would not exceed the capacity of conveyance or treatment of wastewater for the project area. Impacts to wastewater and sewer systems would remain less than significant.

Therefore, Alternative 5 would result in less than significant impacts to capacities and infrastructure of wastewater systems.

Stormwater

Under Alternative 5, impacts to storm drainage would be similar to those described under Alternative 2 due to the fact that 95 percent of the project site is currently impervious or covered. The public-private portion of Alternative 5 would likely have a similar proportion of impervious surfaces, and changes in topography would be minor and similar to Alternative 2. All modifications of existing drainage would conform to building standards and codes outlined in the Naval Base Point Loma Stormwater Pollution Prevention Plan and discussed in Section 3.15, *Water Resources*.

Therefore, Alternative 5 would result in less than significant impacts to stormwater infrastructure.

Electricity and Natural Gas

The estimated increase in electricity demand for Alternative 5 is related to the private development which would add 53,435 megawatts per hour. Alternative 5 would require an additional 56,368 megawatts, compared to the No Action Alternative. Due to the increased efficiency of modern construction, fixtures, and appliances, in general the intensity of use per square feet of space would be expected to decrease under Alternative 5, compared to current operations.

According to the California Energy Demand Updated Forecast for 2018-2030, total demand for the SDG&E planning area is 4,024 gigawatts per hour. Additional electricity demand for Alternative 5 would represent approximately 1.4 percent of current demand within the SDG&E planning area. There would be no need to upgrade the electrical distribution infrastructure as a result of the project. There are 69-kilovolt distribution lines running along north western edge of OTC, terminating at the NTCQ substation. SDG&E performs modeling for electrical power demand on a continual basis to manage resource portfolios and infrastructure needs. New power loads are considered together with other foreseeable loads in the project vicinity and any upgrades to distribution networks or substations would be identified.

Alternative 5 could potentially increase natural gas consumption by 108,042 thousand cubic feet compared to the No Action Alternative. According to the current and projected estimates reported in the 2018 California Gas Report, this represents approximately 0.25 percent of gas demand for the SDG&E planning area. This level of increased demand could be supplied by the current public infrastructure including the 16-inch steel pipeline under Pacific Highway.

Although Alternative 5 would result in increases in consumption of energy, it is not outside of the planned demand increases described in the California Demand Forecast for 2018-2030, or the California Gas Report 2016. While energy use at the site would increase, energy intensity of use is expected to decrease due to sustainable design standards and energy saving efficiencies that would be part of final design pursuant to Navy's instruction.

Therefore, Alternative 5 would result in less than significant impacts to capacities and infrastructure of electrical and gas utilities.

Solid Waste

Alternative 5 would generate an estimated 22,378 tons of total construction and demolition debris, of which 7,832 tons would be delivered to the Miramar Landfill. It would also generate approximately 26,541 tons of solid waste annually due to operations, of which 13,271 tons would be directed towards Miramar Landfill. According to San Diego Public Works Department, the Miramar Landfill accepts 910,000 tons of solid waste annually. Therefore, the combined quantity of municipal solid waste generated as a result of Alternative 5 would represent about 2.32 percent of average annual solid waste accepted to Miramar Landfill if all construction waste was combined with 1 year of annual waste. However, construction and demolition are likely to take place over several years, so the actual amounts delivered to landfills each year are expected to be lower. Additionally, the average annual contribution of solid waste to Miramar, after construction has been completed, would only represent about 1.4 percent of total solid waste delivered annually to the Miramar Landfill. Furthermore, this would only represent 0.5 percent of permitted throughput capacity.

Therefore, Alternative 5 would result in less than significant impacts to capacities and infrastructure of the municipal solid waste facilities serving the project area.

Communications

Impacts to communications under Alternative 5 would be similar to those described for Alternative 3. The NAVWAR redevelopment component of both alternatives would be identical. The private development component would be similar except that Alternative 5 would development of a transit center. The types of communications associated with a transit center would differ from NAVWAR, residential, and commercial activities, but similar types of communications system upgrades would be required. The transit center would essentially be another form of commercial activity with respect to communications infrastructure. The types of effects to communications infrastructure would, therefore, be similar to those described for Alternative 3. Therefore, implementation of the Alternative 5 would result in less than significant impacts to infrastructure related to communications.

3.11.3.7 Summary of Proposed Management Practices, Potential Monitoring, and Potential Mitigation

No monitoring or mitigation measures would be warranted for infrastructure based on the analysis presented in Section 3.11.3.

Proposed Management Practices

- INFRA MGMT-1. Conduct a Water Supply Assessment in collaboration with the San Diego Public Utilities Department and procure/design potable water supply system to meet capacity demand.

3.11.3.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be less than significant impacts to public utilities and infrastructure from implementation the No Action Alternative, Alternative 1, Alternative 2, Alternative 3, Alternative 4, and Alternative 5.

3.12 Airspace

Navigable airspace is defined as the airspace at or above the minimum altitudes of flight including the airspace needed to ensure safety in the takeoff and landing of aircraft. FAA manages this airspace to ensure the safety of aircraft and its efficient use by commercial, general, and military aviation.

OTC is near the San Diego International Airport (approximately 3,200 feet north of San Diego International Airport's Runway 09-27) and Naval Air Station North Island (approximately 2.6 miles northeast of the departure end of Runway 36), which triggers analysis of vertical obstructions that represent hazards to flight. This section focuses on the potential for obstructions in airspace that may affect the facilities height and placement on OTC. Concerns related airspace safety compatibility can be found in Section 3.8, *Public Health and Safety*, and the effects related to noise are described in Section 3.13, *Noise*.

3.12.1 Regulatory Setting

Laws and regulations applicable to airspace resources include the following:

- 14 CFR part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace (referred to as part 77)
- FAA JO 7400.2M, Procedures for Handling Airspace Matters (FAA, 2019)
- FAA Order 1050.1F, Environmental Impacts: Policies and Procedures (FAA, 2015)
- FAA Order 8260.3B (with Change 26), United States Standard for Terminal Instrument Procedures (FAA, 2014)
- California Public Utilities Code section 21670 et seq.
- San Diego County Regional Airport Authority, San Diego International Airport Land Use Compatibility Plan, adopted by San Diego County in Resolution 2014-0012 (San Diego County Regional Airport Authority, 2014)

14 CFR part 77 establishes the requirement to inform FAA of potential construction that meets one of several criteria so the FAA Administrator can determine if it would constitute an obstruction to air navigation. These criteria include construction that is greater than 200 feet above ground level or that exceeds an imaginary surface. Part 77 does not set limits for construction, but instead determines the times when a proposed construction or alteration would require FAA notification and determination. Per its regulations, FAA will officially consider proposals when there is a specific project application. 14 CFR part 77 also applies to Naval Air Station North Island's runways (14 CFR part 77).

The California Public Utilities Code requires each county with an airport to have an Airport Land Use Commission, which must develop an Airport Land Use Compatibility Plan. The Airport Land Use

Compatibility Plan includes consideration of safety and noise and would only support development that would not inhibit safe air navigation. The Airport Land Use Compatibility Plan is the fundamental tool used to promote airport land use compatibility surrounding San Diego International Airport (San Diego County Regional Airport Authority, 2009). Proposals from the federal government are not subject to Airport Land Use Commission review (San Diego County Regional Airport Authority, 2014). However, since the Proposed Action Alternatives may include some non-federal participation, the airspace analysis addresses compatibility with this plan.

3.12.2 Affected Environment

OTC is located approximately 3,200 feet north of the San Diego International Airport and less than 2.5 miles from Naval Air Station North Island. (Figure 3.12-1). OTC ground level elevations vary from about 14 to 16 feet above mean sea level on both OTC Site 1 and OTC Site 2.

Vertical development in the vicinity of San Diego International Airport and Naval Air Station North Island can affect the safety of flight in the vicinity of OTC. There are a number of categories of construction that require FAA review. The most stringent is that any construction above a 1:100 slope within 20,000 feet of the runway would require FAA notification and that the project undergo the FAA's review and approval process. Construction above these heights is not prohibited outright, but when the height of a proposed structure exceeds these limits the project must go through the FAA review process to determine if there would be any permanent or temporary impacts to navigable airspace. The following sections identify the issues that FAA considers when evaluating development in these areas.

3.12.2.1 14 CFR Part 77: Horizontal Surface at San Diego International Airport

14 CFR part 77 defines imaginary surfaces for obstacle identification for the "Safe, Efficient Use and Preservation of the Navigable Airspace". The Part 77 horizontal surface is an imaginary plane that is extended from the runway to help define where objects need to be considered as possible obstructions if they pierce this imaginary surface. Figure 3.12-2 shows a notional set of these surfaces (with the vertical dimension exaggerated for clarity). The green surface is the horizontal surface. Note that the approach surface and associated transition surfaces on the east side are not shown, for clarity of the horizontal surface.

14 CFR part 77.25 defines the horizontal surface (depicted in green in Figure 3.12-2) as a flat horizontal plane located 150 feet above the elevation of the airport and reaching out 10,000 feet horizontally from each runway end. This horizontal surface applies to each runway at the San Diego International Airport, such as Runway 09-27, which is a precision instrument runway, defined as a runway having an existing instrument approach procedure utilizing an instrument landing system or a precision approach. It is the highest category of runway for allowing operations in adverse weather conditions.

The entirety of OTC falls under the Part 77 horizontal surface. Therefore, the maximum construction height that would not penetrate the Part 77 horizontal surface would be 166 feet above mean sea level (14 CFR part 77).

The San Diego International Airport has a graphic planning tool called the Airport Layout Plan (San Diego International Airport, 2009a). The plan addresses the following: existing facilities and planned development for an airport; boundaries and proposed additions to all areas owned or controlled for airport purposes; and the location and nature of airport facilities and structures, and non-aviation areas and improvements, both existing and proposed.

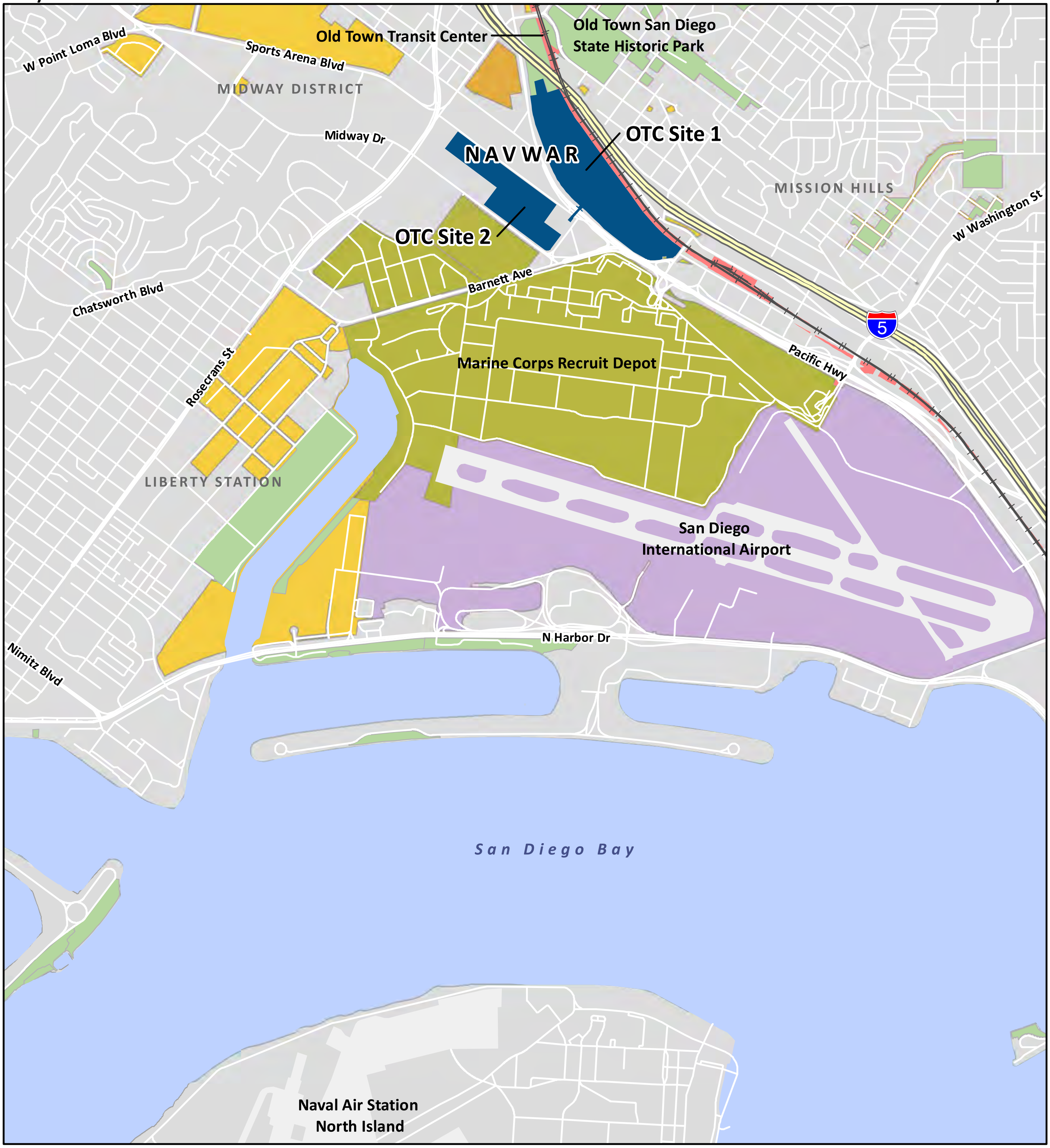
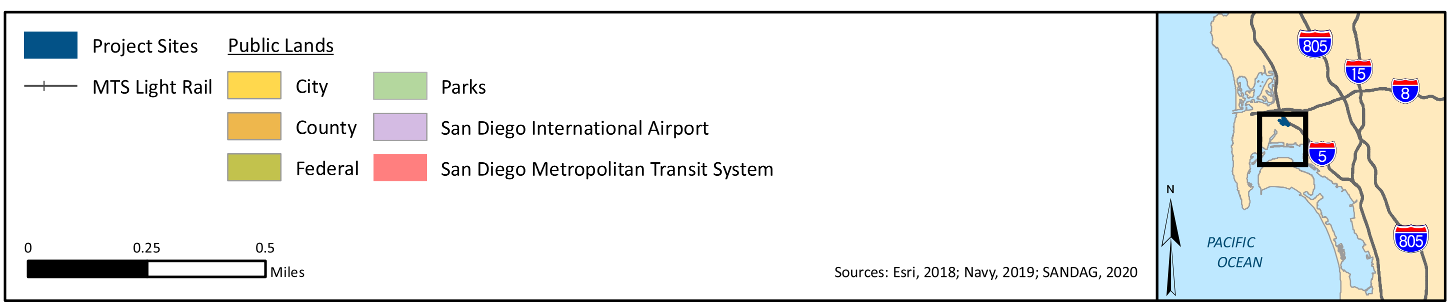
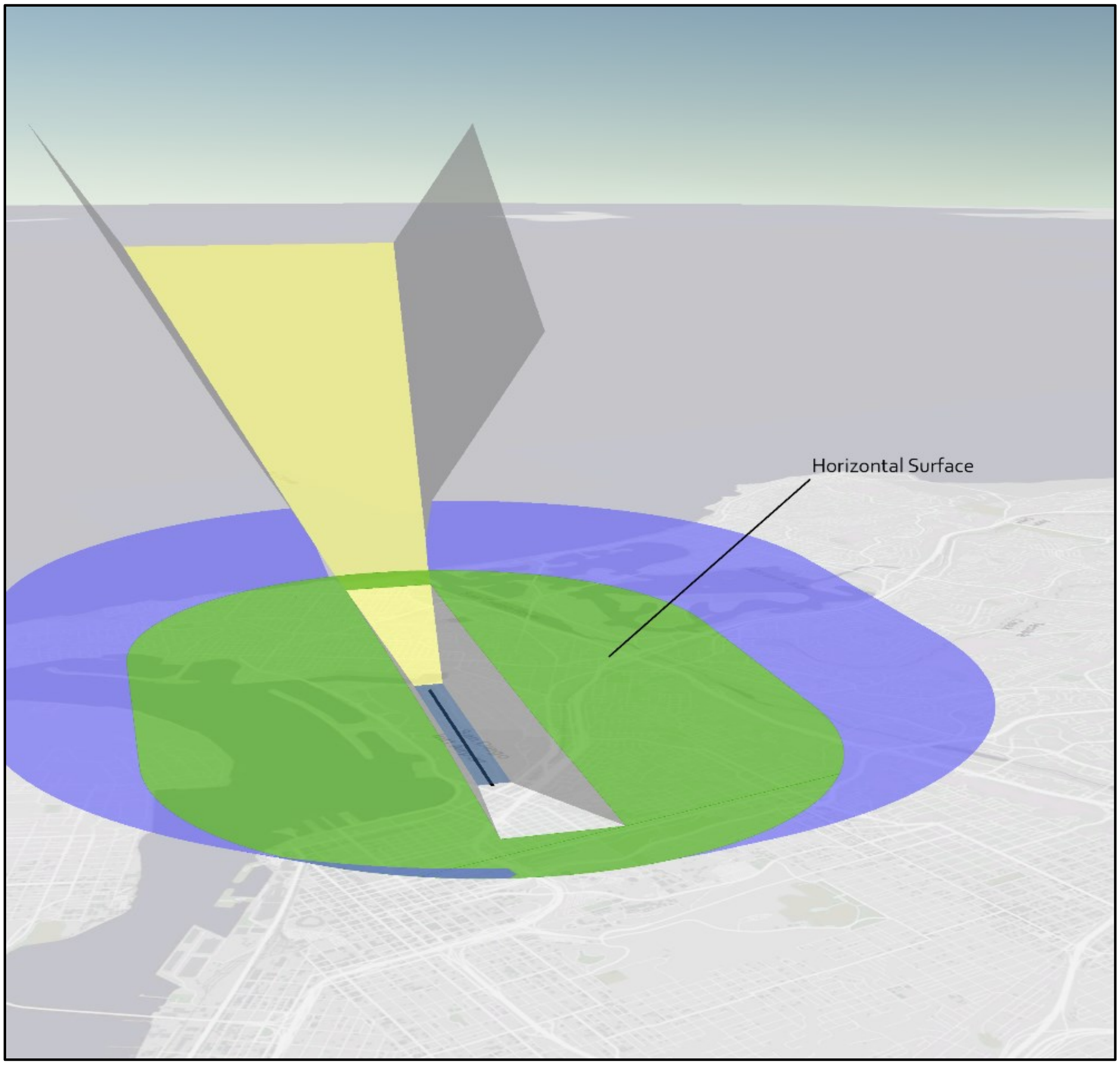


Figure 3.12-1. Nearby Airfields in the Vicinity of OTC Site 1 and OTC Site 2



This plan shows multiple penetrations of the various Part 77 surfaces, including 26 existing penetrations of the horizontal surface. Most of these penetrations of the horizontal surface are utility structures (poles) in the vicinity of the Old Town community in San Diego. Much of Old Town is above the Part 77 horizontal surface at ground level, due to the slope of the terrain to the north of Interstate 5, and north of San Diego International Airport (San Diego International Airport, 2009a).



Note: Vertical dimensions exaggerated by a factor of 10 to clarify elevation distance.

Figure 3.12-2 Typical 14 CFR Part 77 Imaginary Surfaces

General aviation aircraft using Visual Flight Rules departures on Runway 27 comprise another relevant factor that FAA would consider in evaluating proposed building heights in the surrounding area. San Diego International Airport has a single runway, so general aviation aircraft on westerly departures are typically asked by air traffic control to take an immediate right turn after takeoff. This immediate right turn moves the general aviation aircraft, which are typically smaller and slower than airliners, out of the runway environment and reduces the required time separation from the faster commercial jets on approach to Runway 27. This immediate right turn can cause general aviation aircraft to fly over OTC and the surrounding area. Large vertical developments may cause those aircraft to need to extend upwind on the runway centerline until they are past the vertical developments before turning north, necessitating greater separation with the aircraft on approach to Runway 27 (R. Redman, San Diego International Airport, personal communication, December 13, 2019).

3.12.2.2 14 CFR Part 77: Approach Clearance Surface at Naval Air Station North Island

14 CFR part 77.28 defines the Approach Clearance Surface as: “Approach clearance surface. An inclined plane, symmetrical about the runway centerline extended, beginning 200 feet beyond each end of the primary surface at the centerline elevation of the runway end and extending for 50,000 feet. The slope of the approach clearance surface is 50 to 1 along the runway centerline extended until it reaches an elevation of 500 feet above the established airport elevation.” For Runway 18 at Naval Air Station North Island, that surface exists over the top of OTC Site 1 and OTC Site 2. An overhead view of the Part 77 Approach Clearance Surface for Naval Air Station North Island Runway 18 is shown in Figure 3.12-3. In addition to showing the lateral boundaries of this surface, Figure 3.12-3 shows the highest elevation on those properties that would not penetrate this surface. These elevations range from 280 feet mean sea level at the southeast corner of OTC Site 2 to 330 feet mean sea level at the northern point of OTC Site 2 (14 CFR part 77). Development above those altitudes may be determined to affect safety of flight, however that runway (Naval Air Station North Island Runway 18) is nearly never used for a straight-in approach, due to local procedures intended to isolate traffic at San Diego International Airport and Naval Air Station North Island from each other (M. Murphy, NIWC Atlantic, personal communication, January 9, 2020).

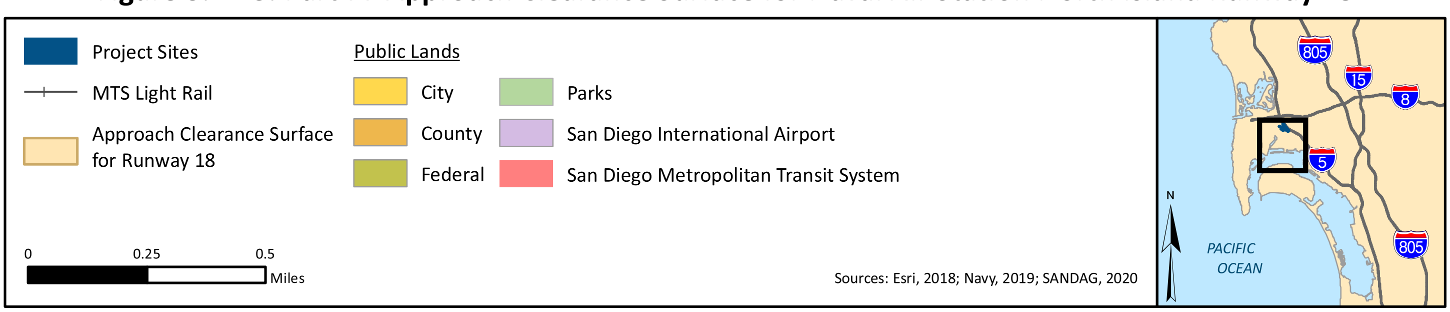
3.12.2.3 Terminal Instrument Procedures at San Diego International Airport

Each instrument approach to an airport has its own Terminal Instrument Procedures surfaces that define safety of flight for that particular approach, based on type of approach, runway design, and other factors. The most restrictive Terminal Instrument Procedures surfaces of those at San Diego International Airport for the geographic location of OTC are those for the lateral navigation approach to Runway 09 at San Diego, which overlies all of OTC Site 2 and most of OTC Site 1, as shown in Figure 3.12-4. This Terminal Instrument Procedures surface allows development up to 345 feet at OTC Site 1 and OTC Site 2. This limit increases as one moves further away from the runway, up to 515 feet above mean sea level at the very north end of OTC. The highest and lowest points of this surface for OTC Site 1 and OTC Site 2 are also shown in Figure 3.12-4.

3.12.2.4 Helicopter Routes

Figure 3.12-5 depicts the routes used in the vicinity of San Diego International Airport for local helicopter use. This type of route is established so that air traffic control can know and predict where different types of traffic can be expected; however, helicopters will not always fly along the designated routes. One of these routes passes directly over OTC. For helicopters already using these routes and crossing over OTC there is likely no conflict, due to the height they will be flying at (between 1,000 feet and 3,000 feet mean sea level). However, helicopters traveling to or from San Diego International Airport would be climbing or descending below these altitudes and would likely be under control of San Diego International Airport air traffic control.

Figure 3.12-3. Part 77 Approach Clearance Surface for Naval Air Station North Island Runway 18



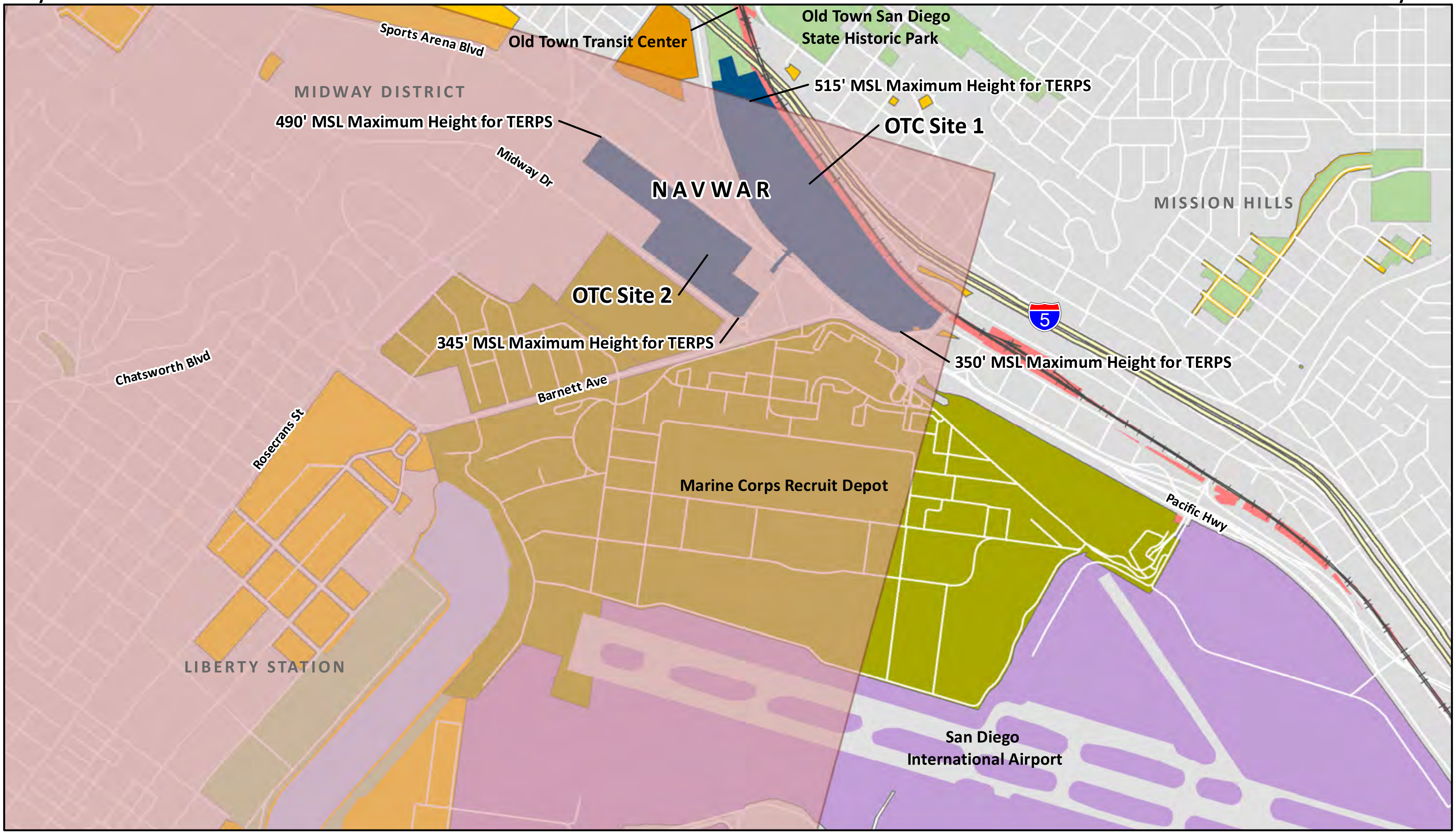


Figure 3.12-4. Terminal Instrument Procedures Surfaces for San Diego International Airport

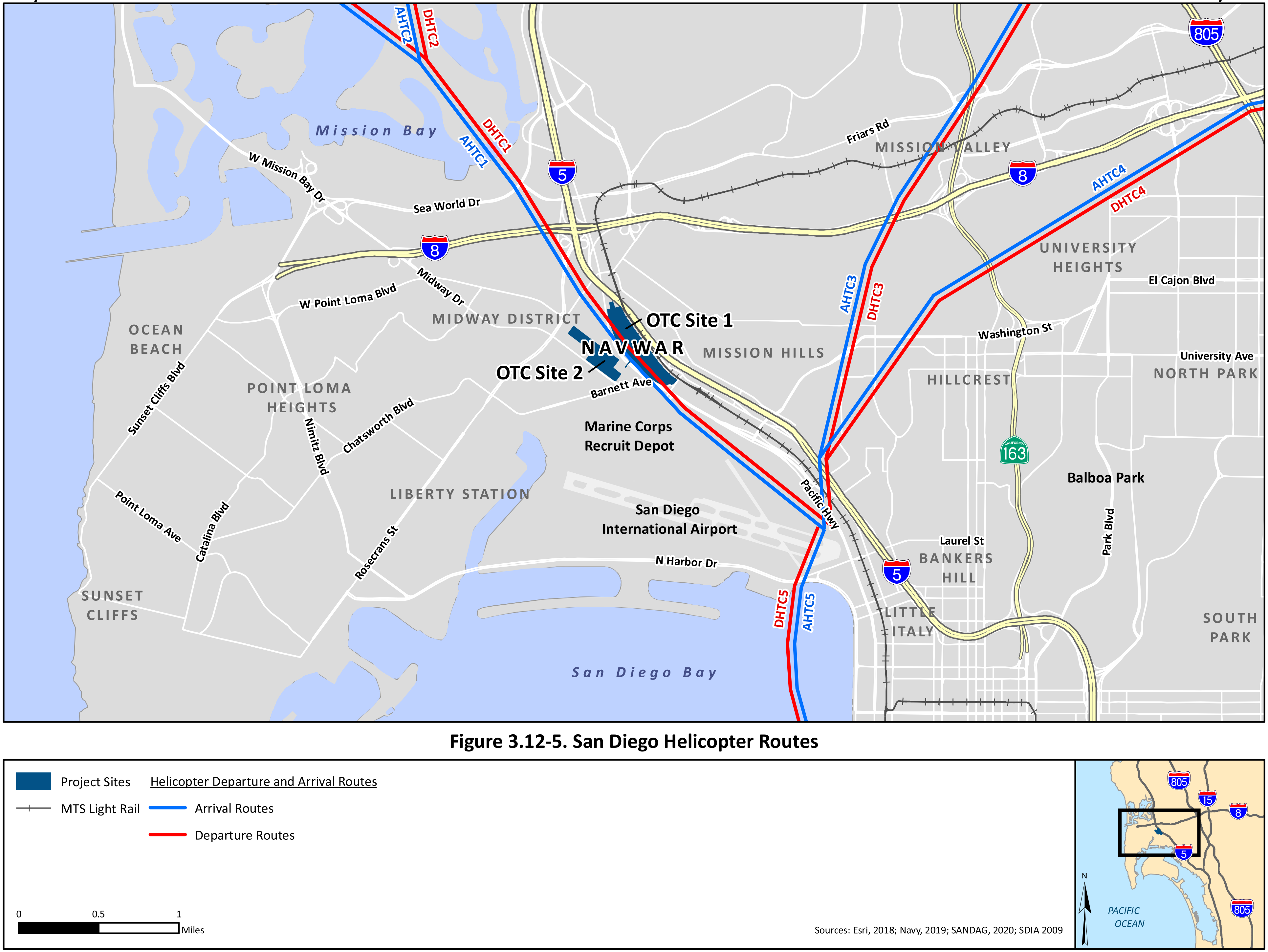


Figure 3.12-5. San Diego Helicopter Routes

3.12.3 Environmental Consequences

OTC is located near San Diego International Airport and Naval Air Station North Island. Therefore, redevelopment at OTC has the potential to affect airspace if there is a change to building heights (as proposed under Alternatives 2 through 5). Implementation of the No Action Alternative or Alternative 1 would not have in impact on airspace. Implementation of Alternatives 2 through 5 will require FAA review in accordance with 14 CFR part 77. It is assumed that FAA approval is required under these regulations to avoid airspace conflicts. Therefore, the basis of the impact analysis for Alternatives 2 through 5 assume that this FAA review and approval occurs and that the proposed building heights are acceptable to the FAA. The Navy is currently coordinating with FAA to ensure that proposed building heights associated with Alternatives 2 through 5 are compatible with FAA's airspace requirements and do not conflict with general aviation and helicopter activities that currently occur in the area.

If FAA determines the selected alternative would conflict with FAA airspace requirements, the developer would work with the FAA and modify the design within the parameters of the EIS analysis.

3.12.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur and there would be no change to the heights of structures that currently exist on OTC. The existing building heights are lower than the Part 77 horizontal surface, which is 166 feet above mean sea level. Therefore, no impacts to airspace would occur with implementation of the No Action Alternative.

3.12.3.2 Alternative 1: NAVWAR-Only Redevelopment

This alternative would include revitalization of OTC to meet NAVWAR's facility requirements with Navy-funded capital improvements only. This would include consolidating NAVWAR operations into two of the existing 310,000 square feet buildings (Buildings 2 and 3) on OTC Site 1. The proposed redevelopment would not increase above the current building height. The existing building heights are lower than the Part 77 horizontal surface, which is 166 feet above mean sea level. The existing functions and buildings at OTC Site 2 would not be modified under this alternative.

Alternative 1 would not result in increased building heights and therefore would have no impact to safety of flight in the vicinity. Therefore, no impacts to airspace would occur with implementation of the Alternative 1.

3.12.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

This alternative would include the construction of new Navy facilities for NAVWAR on OTC through a public-private development agreement, and the relocation of some office, laboratory, warehouse, and storage functions to a separate off-site location (see Section 1.5, *Scope of Environmental Analysis*). Alternative 2 would also include new mixed-use development including residential, office, retail, hotel and parking.

As the details of the proposed development by a potential partner are not currently known, this alternative analyzes a development scenario based on the maximum footprint by use type that could be accommodated on OTC. Potential impacts to airspace (based on the factors outlined in Section 3.12.2) are as described below.

Federal Aviation Regulations Part 77–Horizontal Surface at San Diego International Airport

The Part 77 horizontal surface is 166 feet above mean sea level at OTC Site 1 and OTC Site 2. Other structures in the Old Town area currently penetrate this horizontal surface. However, new construction associated with Alternative 2 would result in structures up to 240 feet above mean sea level, which would penetrate the Part 77 horizontal surface. This would trigger the Federal Aviation Regulations Part 77 notification requirement. Figure 3.12-6 shows a 3D view, looking north-west toward OTC. This figure has the vertical axis exaggerated by a factor of 5, to better show the detail. The blue solid blocks represent the entire property boundaries of OTC Site 1 and OTC Site 2 extended upward to the maximum development height (240 feet) under Alternative 2. The green plane in the figure represents the Part 77 horizontal surface for San Diego International Airport Runway 09-27. It is at 166 feet above mean sea level, and the proposed development under Alternative 2 is 240 feet above mean sea level. The FAA will therefore need to review the specific construction proposal when it is ready.

Penetration of the Part 77 horizontal surface is not the only criteria for something to be considered an impediment to flying safety. Coordination with San Diego International Airport indicates that the most likely grounds for FAA to rule on a particular structure constructed on OTC Site 1 or OTC Site 2 would be for general aviation aircraft Visual Flight Rules departures on Runway 27.

Since San Diego International Airport has a single runway, typical procedures for general aviation aircraft westerly departures are to clear the aircraft taking off for an immediate right turn after takeoff. This immediate right turn moves the general aviation aircraft, which are typically smaller and slower than airliners, out of the runway environment and reduces the required time separation from the faster commercial jets on approach to Runway 27. This immediate right turn would potentially have the general aviation aircraft fly over the OTC area. FAA’s decision on this topic will affect the maximum elevation for the development of these sites (R. Redman, San Diego International Airport, personal communication, December 13, 2019).

Federal Aviation Regulations Part 77–Approach Clearance Surface at Naval Air Station North Island

Naval Air Station North Island Runway 18/36 has an extended centerline (to the north) that passes over San Diego International Airport (14 CFR part 77) and OTC. OTC lies beneath this approach clearance surface to Naval Air Station North Island’s Runway 18. Because this is a sloped surface, it goes over OTC at a range of 280 to 330 feet above mean sea level. Figure 3.12-6 also shows this approach clearance surface that passes over OTC Site 1 and OTC Site 2 for the approach clearance surface for Naval Air Station North Island’s Runway 18. Under Alternative 2, the approach clearance surface for Naval Air Station North Island wound not be penetrated by the structures (maximum height of 240 feet) on either OTC Site 1 or OTC Site 2.

Terminal Instrument Procedures at San Diego International Airport

The lateral navigation approach to Runway 09 has Terminal Instrument Procedures surfaces that overlie the site development at OTC. The Terminal Instrument Procedures surfaces would allow development up to 345 feet (at a minimum) throughout OTC. This limit increases as one moves further away from the runway, up to 515 feet above mean sea level at the very north end. Maximum building heights associated with Alternative 2 are 240 feet.

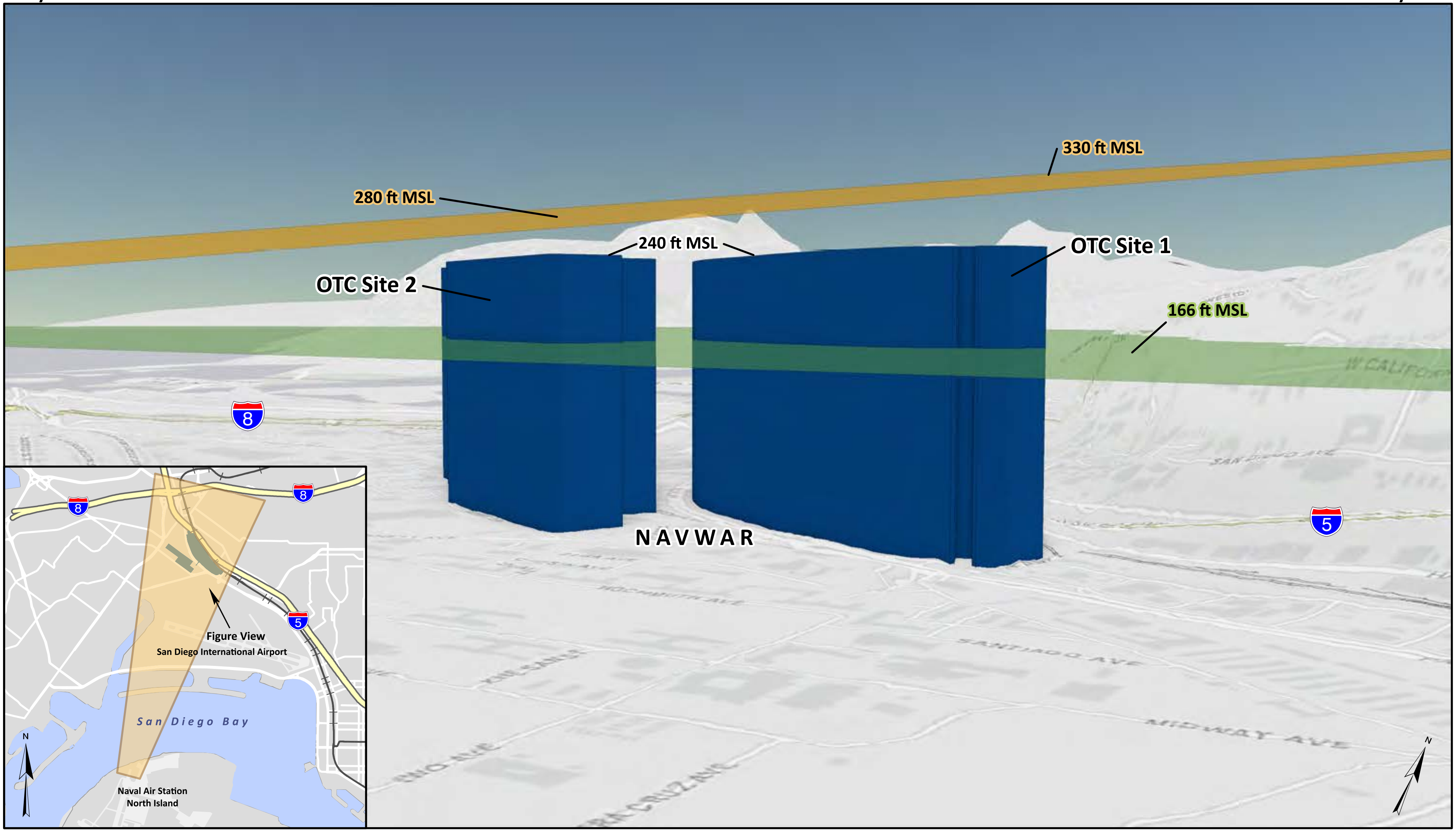
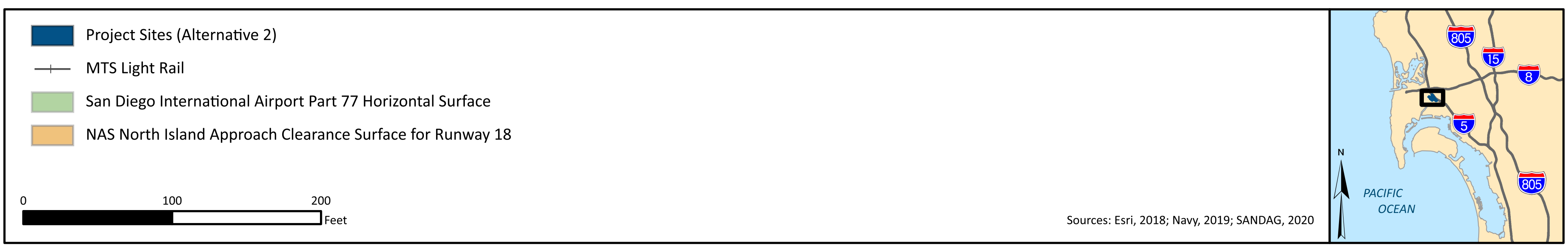


Figure 3.12-6. 3D View of Alternative 2 in the Vicinity of Nearby Airspaces



The Navy is currently coordinating with FAA to ensure that proposed building heights associated with Alternative 2 are compatible with FAA's airspace requirements and do not conflict with Terminal Instrument Procedures. Assuming FAA approves construction under Part 77, building heights associated with Alternative 2 would not have significant impacts to airspace requirements associated with Terminal Instrument Procedures at the San Diego International Airport.

Helicopter Routes

It is unlikely that vertical development under Alternative 2 would interfere with air traffic on the established helicopter routes, based on the flying altitude (1,000 to 3,000 feet above mean sea level). Helicopters arriving/departing from San Diego International Airport fly at lower altitudes near the airport. A new procedure may be required, depending on the final design of the development on OTC Site 1 and OTC Site 2 under this alternative. In the case that these departures and arrivals are affected by building heights proposed for Alternative 2, the FAA may indicate a need for a design change or may simply alter the procedure for use of these routes (in terms of using them to get to/from San Diego International Airport) to ensure safety of flight for these helicopters and the other aircraft in the area.

Summary

As described in the introduction to Section 3.12.3, the basis of this impact analysis assumes that this FAA review and approval occurs and that the proposed building heights are acceptable to the FAA. This applies for proposed building heights and for potential changes to general aviation aircraft activities that currently occur at San Diego International Airport. The Navy is currently coordinating with FAA to ensure that proposed building heights associated with Alternative 2 are compatible with FAA's airspace requirements and do not conflict with general aviation and helicopter activities that currently occur in the area. Assuming FAA approves construction after its review, building heights associated with Alternative 2 would result in less than significant impacts to airspace.

3.12.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

The limitations on height of vertical development at OTC Site 1 and OTC Site 2 under Alternative 3 would be the same as specified for Alternative 2. The Navy is currently coordinating with FAA to ensure that proposed building heights are compatible with FAA's airspace requirements and do not conflict with general aviation and helicopter activities that currently occur in the area. When a specific proposal is developed, the FAA will use the same criteria for evaluation of potential airspace impacts as explained for Alternative 2. Assuming FAA approves construction after its review, building heights associated with Alternative 3 would result in less than significant impacts to airspace.

3.12.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

This alternative would include the construction of new Navy facilities for NAVWAR on OTC through a public-private development agreement, and the relocation of some office, laboratory, warehouse, and storage functions to a separate off-site location (see Section 1.5, *Scope of Environmental Analysis*). Alternative 4 would also include new mixed-use development including residential, office, retail, hotel-parking, and consolidation of a transit center.

As the details of the proposed development by a potential partner are not currently known, this alternative analyzes a development scenario based on the maximum footprint by use type that could be accommodated on OTC. Potential impacts to airspace (based on the factors outlined in Section 3.12.2) are described below.

Federal Aviation Regulations Part 77–Horizontal Surface at San Diego International Airport

The Part 77 horizontal surface is 166 feet above mean sea level at OTC. Other structures in the Old Town area currently penetrate this horizontal surface. However, new construction associated with Alternative 4 would result in structures up to 350 feet above mean sea level, which would penetrate the Part 77 horizontal surface. This would trigger the Federal Aviation Regulations Part 77 notification requirement. Figure 3.12-7 shows a 3D view, looking north-west toward OTC. This figure has the vertical axis exaggerated by a factor of 5, to better show the detail. The blue solid blocks represent the entire property boundaries of OTC Site 1 and OTC Site 2 extended upward to the maximum development height (350 feet) under Alternative 4. The green plane in the figure represents the Part 77 horizontal surface for San Diego International Runway 09-27. It is at 166 feet above mean sea level, and the proposed development under this alternative is 350 feet above mean sea level. The FAA will therefore need to review the specific construction proposal when it is ready. Penetration of the Part 77 horizontal

surface is not the only criteria for something to be considered an impediment to flying safety. Coordination with San Diego International Airport indicates that the most likely grounds for FAA to rule on a particular structure constructed on OTC Site 1 or OTC Site 2 would be for general aviation aircraft Visual Flight Rules departures on Runway 27.

Since San Diego International Airport has a single runway, typical procedures for general aviation aircraft westerly departures are to clear the aircraft taking off for an immediate right turn after takeoff. This immediate right turn moves the general aviation aircraft, which are typically smaller and slower than airliners, out of the runway environment and reduces the required time separation from the (faster) commercial jets on approach to Runway 27. This immediate right turn would potentially have the general aviation aircraft fly over the OTC area. FAA's decision on this topic will affect the maximum elevation for the development of these sites.

Federal Aviation Regulations Part 77–Approach Clearance Surface at Naval Air Station North Island

Naval Air Station North Island Runway 18/36 has an extended centerline and associated approach clearance surface (to the north) that passes over San Diego International Airport (14 CFR part 77) and OTC. Because this is a sloped surface, it goes over OTC at a height of 280 to 330 feet above mean sea level. Figure 3.12-7 shows this approach clearance surface for Naval Air Station North Island's Runway 18 (depicted in orange) that passes over OTC. Under Alternative 4, the proposed building height envelope extends above this surface by between 20 and 70 feet, depending on location. The sloped surface is higher to the north, so the northernmost point of OTC Site 1 extends above the surface by only 20 feet. At the southernmost point of OTC Site 2, the difference is 70 feet. While penetration of an approach clearance surface might normally be considered critical, in this case, the fact that San Diego International Airport operates in the area means that Naval Air Station North Island nearly never uses this runway on an extended straight-in approach or the opposite runway's (Runway 36) straight departure (M. Murphy, NIWC Atlantic, personal communication, January 9, 2020). Therefore, it is not anticipated that alternative would be opposed by the Navy.

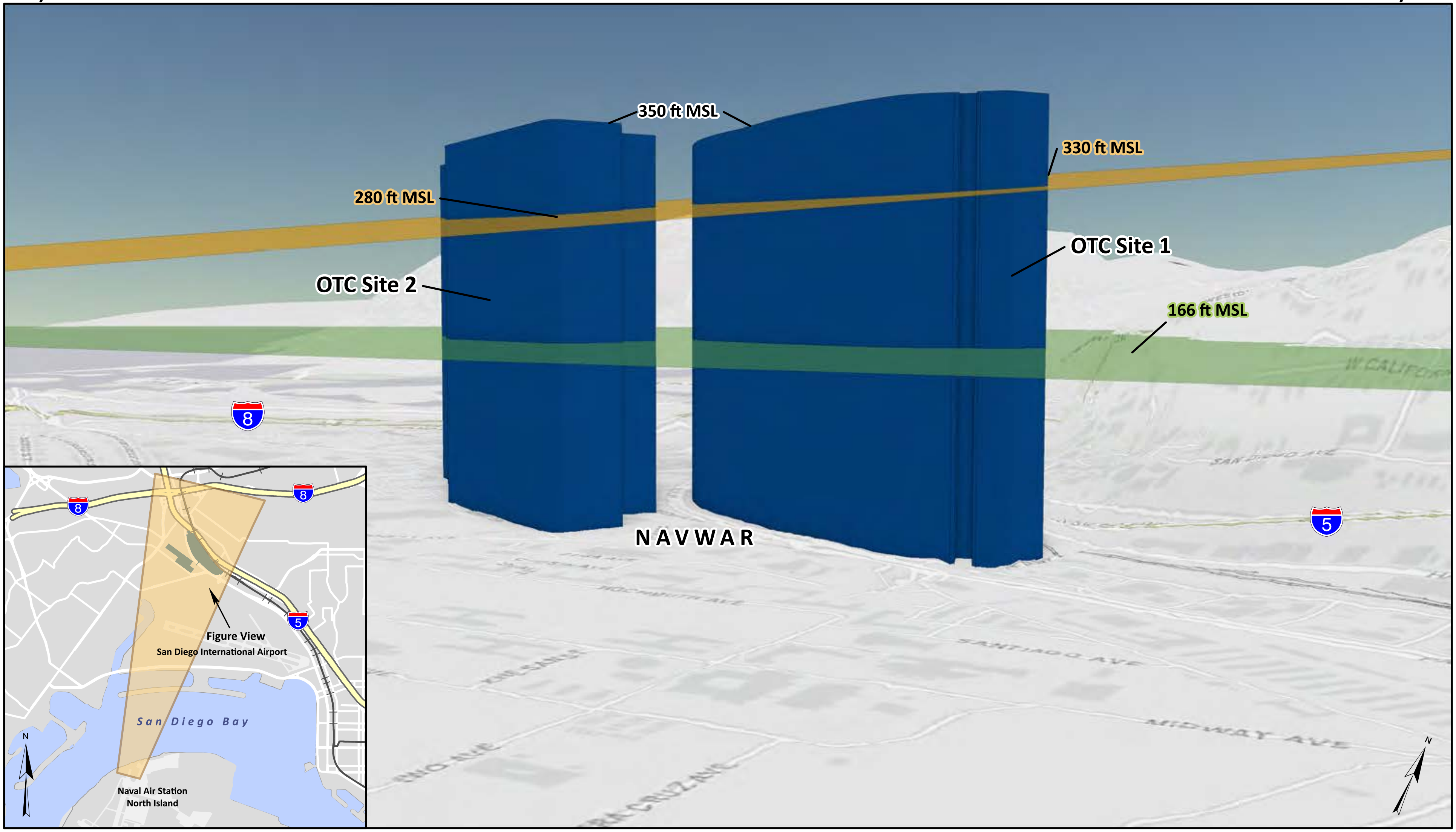
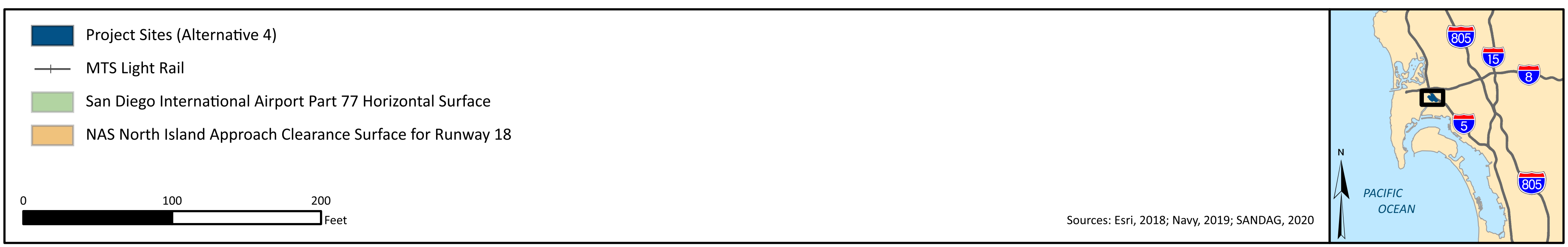


Figure 3.12-7. 3D View of Alternative 4 in the Vicinity of Nearby Airspaces



Terminal Instrument Procedures at San Diego International Airport

The lateral navigation approach to Runway 09 has Terminal Instrument Procedures surfaces that overlie the site development at OTC. The Terminal Instrument Procedures surfaces would allow development up to 345 feet (at a minimum) throughout OTC. This limit increases as one moves further away from the runway, up to 515 feet above mean sea level at the very north end. Maximum building heights associated with Alternative 4 are 350 feet. This means that all of OTC Site 1 could be developed up to maximum 350 feet analyzed under this alternative without penetrating the Terminal Instrument Procedures surface, and the same is true for OTC Site 2 except for in the southern corner of the site. Specific construction proposals will be evaluated by FAA and can avoid this conflict by staying below a maximum height of 345 in the very south corner of OTC Site 2, or offsetting slightly north or west of this corner and building to a full 350 feet above mean sea level.

The Navy is currently coordinating with FAA to ensure that proposed building heights associated with Alternative 4 are compatible with FAA's airspace requirements and do not conflict with Terminal Instrument Procedures. Assuming FAA approves construction, building heights associated with Alternative 4 would not have significant impacts to airspace requirements associated with Terminal Instrument Procedures at the San Diego International Airport.

Standard Helicopter Routes in San Diego

It is unlikely that vertical development under Alternative 4 would interfere with air traffic on the established helicopter routes, based on the flying altitude (1,000 to 3,000 feet above mean sea level). Helicopters arriving/departing from San Diego International Airport fly at lower altitudes near the airport. A new procedure may be required, depending on the final design of the development on OTC Site 1 and OTC Site 2 under this alternative. In the case that these departures and arrivals are affected by building heights proposed for Alternative 4, the FAA may indicate a need for a design change or may simply alter the procedure for use of these routes (in terms of using them to get to/from San Diego International Airport) to ensure safety of flight for these helicopters and the other aircraft in the area.

Summary

As described in the introduction to Section 3.12.3, the basis of this impact analysis assumes that this FAA review and approval occurs and that the proposed building heights are acceptable to the FAA. This applies for proposed building heights and for potential changes to general aviation aircraft activities that currently occur at San Diego International Airport. The Navy is currently coordinating with FAA to ensure that proposed building heights associated with Alternative 4 are compatible with FAA's airspace requirements and do not conflict with general aviation and helicopter activities that currently occur in the area. Assuming FAA approves construction after its review, building heights associated with Alternative 4 would result in less than significant impacts to airspace.

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

The limitations on height of vertical development at OTC Site 1 and OTC Site 2 under Alternative 5 would be the same as specified for Alternative 4. The Navy is currently coordinating with FAA to ensure that proposed building heights are compatible with FAA's airspace requirements and do not conflict with general aviation and helicopter activities that currently occur in the area. When a specific proposal is developed, the FAA will use the same criteria for evaluation of potential airspace impacts as explained for Alternative 4. Therefore, Alternative 5 would result in less than significant impacts to airspace.

3.12.3.7 Summary of Proposed Management Practices, Monitoring, and Mitigation

No management practices, monitoring measures, or mitigation would be warranted for airspace based on the analysis presented in Section 3.12.3.

3.12.3.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be no impact for the No Action Alternative and Alternative 1 and less than significant impacts to airspace from implementation of, Alternative 2, Alternative 3, Alternative 4, and Alternative 5.

3.13 Noise

This section evaluates the existing conditions and potential project-related impacts of noise in the context of the human environment. Noise effects to wildlife and other biological resources are discussed in Section 3.16, *Biological Resources*.

3.13.1 Definition of Resource

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

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

Although continuous and extended exposure to high noise levels (e.g., through occupational exposure) can cause hearing loss, the principal human response to noise is annoyance. The response of different individuals to similar noise events can be diverse and may be influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual. In-depth background information on noise, including its effect on many facets of the environment is provided in Appendix M.

3.13.1.1 Basics of Sound and A-Weighted Sound Level

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. This vast range means that using a linear scale to represent sound intensity is not feasible. The dB is a logarithmic unit used to represent the intensity of a sound, also referred to as the sound level. All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second or Hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements are usually on an "A-weighted" scale that filters out very low and very high frequencies to replicate human sensitivity. It is common to add the "A" to the measurement unit to identify that the measurement has been made with this filtering process and is written as A-weighted decibels. In this document, the dB unit refers to A-weighted sound levels. Table 3.13-1 provides a comparison of how the human ear perceives changes in loudness on the logarithmic scale.

Table 3.13-1 Subjective Responses to Changes in A-Weighted Decibels

Change	*Change in Perceived Loudness*
3 dB	Barely perceptible
5 dB	Quite noticeable
10 dB	Dramatic – twice or half as loud
20 dB	Striking – fourfold change

Figure 3.13-1 (Cowan, 1994) provides a chart of A-weighted sound levels from typical noise sources. Some noise sources (e.g., air conditioner, vacuum cleaner) are continuous sounds that maintain a constant sound level for some time period. Other sources (e.g., automobile, heavy truck) are the maximum sound produced during an event like a vehicle pass-by. Other sounds (e.g., urban daytime, urban nighttime) are averages taken over extended periods of time. A variety of noise metrics have been developed to describe noise over different time periods, as discussed below.

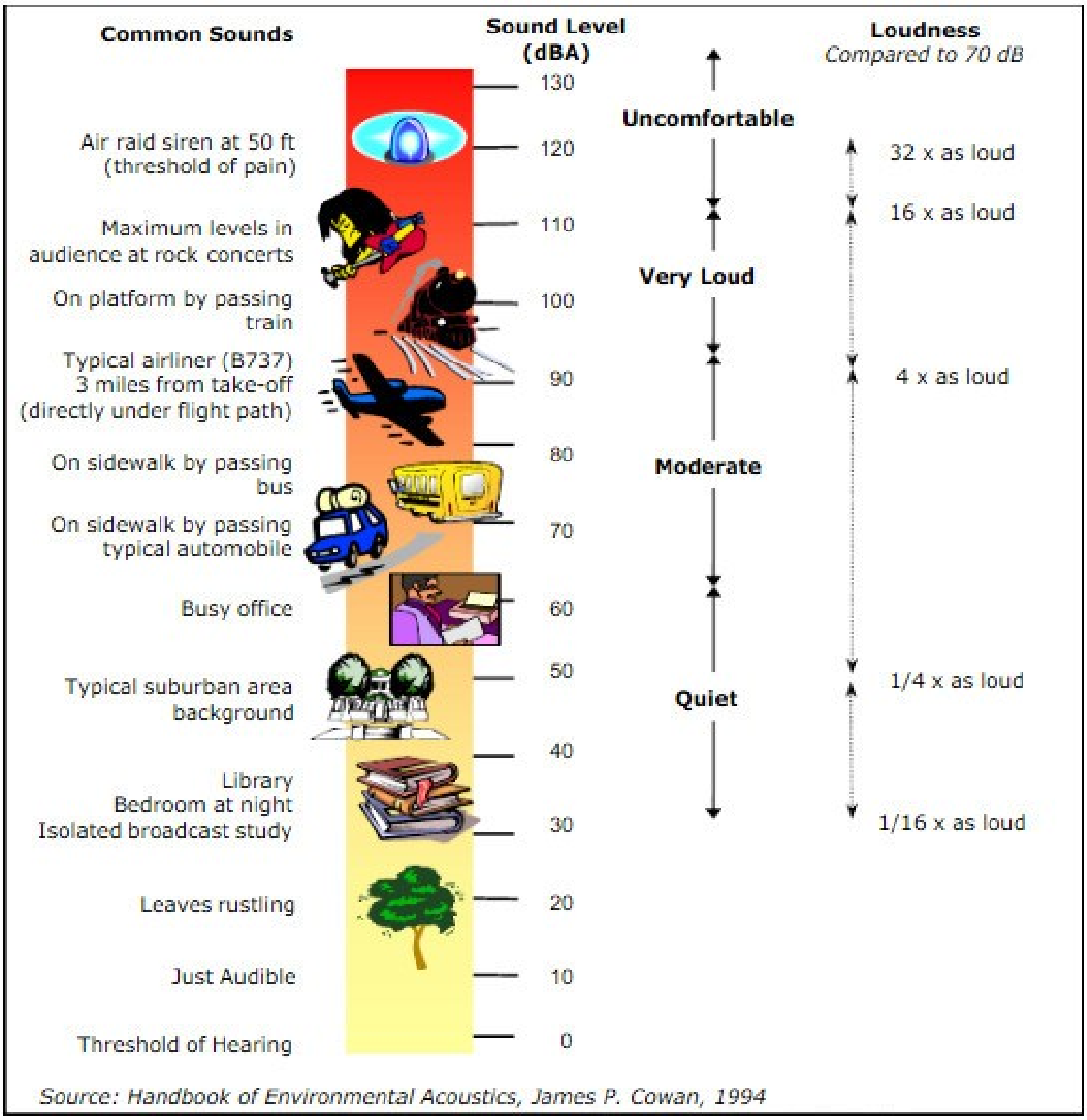


Figure 3.13-1 A-Weighted Sound Levels from Typical Sources

3.13.1.2 Noise Metrics

A metric is a system for measuring or quantifying a particular characteristic of a subject. Since noise is a complex physical phenomenon, different noise metrics help to quantify the noise environment. The noise metrics used in this EIS are described in summary format below and in a more detailed manner in Appendix M. While the Day-Night Average Sound Level (DNL) and CNEL noise metrics are the most commonly used tools for analyzing noise generated at an airfield, they apply for all noise events of interest. The DoD has developed additional metrics and analysis techniques to provide more detailed noise exposure information for the decision process and improve the discussion regarding noise exposure. The DoD Noise Working Group product, Improving Aviation Noise Planning, Analysis and Public Communication with Supplemental Metrics (DoD Noise Working Group, 2009) was used to determine the appropriate metrics and analysis tools for this EIS.

Day-Night Average Sound Level

The DNL metric is the energy-averaged sound level measured over a 24-hour period, with a 10-dB penalty assigned to noise events occurring during the period between 10 p.m. and 7 a.m. (often referred to as "acoustic night"). The 10-dB penalty is the equivalent of multiplying the events by 10. DNL values are average quantities, mathematically representing the continuous sound level that would be present if all the variations in sound level that occur over a 24-hour period were averaged to have the same total sound energy. The DNL metric quantifies the total sound energy received and is therefore a cumulative measure, but it does not provide specific information on the number of noise events or the individual sound levels that occur during the 24-hour day. DNL is the standard noise metric used by the U.S. Department of Housing and Urban Development, FAA, USEPA, and DoD. Studies of community annoyance in response to numerous types of environmental noise show that DNL correlates well with impact assessments; there is a consistent relationship between DNL and the level of annoyance (see Appendix M). Most people are exposed to sound levels of 50 to 55 DNL or higher on a daily basis and research has indicated that about 87 percent of the population is not highly annoyed by outdoor sound levels below 65 dB DNL (Federal Interagency Committee on Urban Noise, 1980). Therefore, the 65 dB DNL noise contour is used to help evaluate the compatibility of aircraft operations, and road and rail traffic with local land use, particularly for land use associated with or in the vicinity of airfields.

Community Noise Equivalent Level

CNEL is a noise metric adopted as a standard by the State of California. The CNEL metric is similar to the DNL metric and is also an energy-averaged sound level measurement. DNL and CNEL provide averaged noise levels taking into consideration and applying penalties for annoyance from intrusive events that occur during evening and nighttime hours. Both DNL and CNEL are measures of cumulative noise exposure over a 24-hour period, with adjustments to reflect the added intrusiveness of noise during certain times of the day. However, while DNL considers one adjustment period (the 10 dB penalty for nighttime noise), CNEL also reflects a second adjustment period. In addition to the 10 dB penalty for events at night, CNEL adds a second adjustment period where each noise event in the evening (defined as 7 p.m. to 10 p.m.) is counted three times, resulting in an approximately 5 dB increase in the averaged noise level.

Equivalent Sound Level

The equivalent sound level is another useful cumulative noise metric. equivalent sound level is the continuous sound level that would be present if all the variations in sound level occurring over a specified period were smoothed out as if they contained the same total sound energy. The same calculation for a daily average time period such as DNL or CNEL but without the penalties is a 24-hour equivalent sound level, abbreviated 24-hour equivalent sound level. Other typical time periods for equivalent sound level are 1 hour and 8 hours.

3.13.1.3 Noise Effects

An extensive amount of research has been conducted regarding noise effects, including annoyance; speech interference; sleep disturbance; noise-induced hearing impairment; nonauditory health effects; performance effects; noise effects on children; effects on domestic animals and wildlife; and effects on property values, structures, terrain, and archaeological sites. These effects are discussed in Appendix M.

3.13.1.4 Region of Influence for OTC Noise Analysis

The ROI for the analysis of noise impacts in this EIS (Figure 3.13-2) is defined as the area within 0.5 mile of OTC because noise levels from construction activities at the proposed project site (which would be higher than noise levels from operations onsite under any of the action alternatives) would dissipate to ambient levels within this distance. For example, construction equipment noise levels vary between 70- and 95-dB maximum sound level when measured 50 feet from the source (FHWA, 2006). At 0.5 mile away the maximum of that range would reduce to 60 dB before factoring terrain or shielding affects from buildings. Transportation-related noise changes associated with the Proposed Action Alternatives would be greatest along streets with the largest changes in traffic volume and nearest to the proposed transit center and within the ROI.

Within the ROI, noise sensitive receptors are those areas or groups most likely to be impacted by project-related noise. A noise sensitive receptor represents a location where noise interferes with normal activities associated with its use. Common noise sensitive land uses include schools, places of worship, housing, childcare facilities, and hospitals. Figure 3.13-2 depicts applicable noise sensitive receptors identified within the ROI, which includes the following near OTC:

- Veteran’s Village Transitional Housing adjacent to OTC Site 1 to the east
- Healthcare facility adjacent to OTC Site 2 to the east
- Dewey Elementary School and a residential neighborhood approximately 1,000 feet southwest of OTC Site 2
- Several places of worship and a residential neighborhood beginning 300 feet to the northeast of OTC Site 1 beyond Interstate 5

As discussed in more detail below in Section 3.13.3, aircraft activity at the nearby San Diego International Airport and vehicle traffic on Interstate 5 are the primary contributors to the current noise environment in the ROI. The greatest noise levels from aircraft operations typically occur beneath the main approach and departure corridors, in local air traffic patterns around airfields, and in areas immediately adjacent to parking ramps and aircraft staging areas. Because OTC is outside these areas, aircraft noise plays a less dominant role in the ROI noise environment and road traffic noise must also be considered.

The primary effect of aircraft noise on exposed communities is long-term annoyance, defined by USEPA as any negative subjective reaction on the part of an individual or group. The scientific community has adopted the use of long-term annoyance as a primary indicator of community response and there is a consistent relationship between DNL/CNEL and the level of community annoyance (Federal Interagency Committee on Noise, 1992). Additional details are provided in Appendix M.

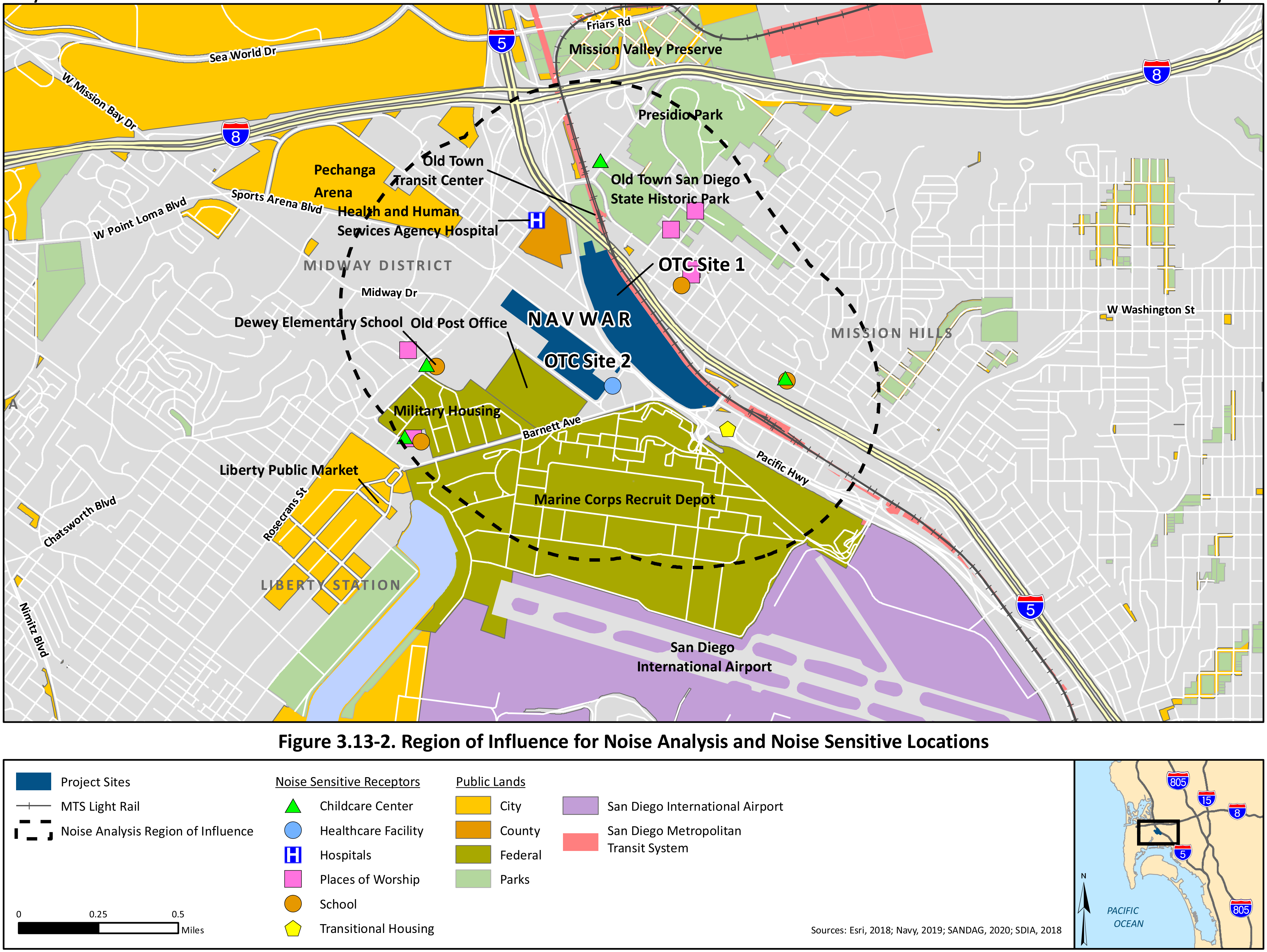


Figure 3.13-2. Region of Influence for Noise Analysis and Noise Sensitive Locations

3.13.2 Regulatory Setting

Laws and regulations applicable to noise include the following, as detailed in Appendix M:

- Noise Control Act of 1972
- Federal Aviation Regulation, part 150, “Airport Noise Compatibility Planning”
- 23 CFR 771
- CEQA
- San Diego Noise Abatement and Control Ordinance
- City of San Diego Noise Element

3.13.3 Affected Environment

The ambient noise environment within the ROI is influenced by a variety of typical urban noise sources, including most prominently aircraft noise and vehicular traffic. Existing aircraft activity at San Diego International Airport is the primary source of noise in the ROI except areas closest to Interstate 5, which are dominated by traffic noise. The San Diego International Airport (approximately 3,200 feet south of OTC) is open 24 hours per day, but flights are only able to depart without incurring a penalty from 6:30 a.m. to 11:30 p.m. (San Diego International Airport, 2020). Figure 3.13-3 depicts the San Diego Airport Noise contours. The Airport Influence Area on the figure reflects Review Area 1, while Review Area 2 extends to the area beyond 60 dB CNEL (see Section 3.4, *Land Use*, for a figure depicting the entire Airport Influence Area). The review areas identify locations requiring additional compatibility consideration prior to development. As depicted in the figure, OTC Site 1 and OTC Site 2 are currently exposed to a CNEL of 60 to 63 dB. Noise levels at the nearest noise sensitive receptors vary from less than 60 up to 65 dB CNEL due to existing aircraft operations at San Diego International Airport, as detailed in Table 3.13-2. For locations between contour levels, values in Table 3.13-2 have been estimated.

Table 3.13-2 Existing Aircraft Noise Levels at Nearest Noise Sensitive Receptors

Location	*Type*	*Existing Aircraft Noise (dB CNEL)*
OTC	Mixed	<60 to 63
Health and Human Services Agency	Hospital	<60
Dewey Elementary	School	64
Veteran’s Village of San Diego	Transitional Housing	65
Barnett Avenue and Tuscaloosa Street	Residential	65
Moore Street and Arista Street	Residential	<60

The Midway-Pacific Highway Community Plan analyzed the noise environment by deploying eight sound level meters fitted with microphones throughout the community as part of a traffic noise study (City of San Diego, 2017b). The nearest microphone site to OTC, adjacent to Sports Arena Boulevard east of Rosecrans Street, identified the following as primary sources of noise: distant traffic on Pacific Highway and Interstate 5, local traffic on Sports Arena Boulevard, intermittent westbound jet aircraft departures from San Diego International Airport, and intermittent semi-truck engine idling across the roadway at an existing retail shipping facility. Noise contour lines from the traffic noise study, when overlaid on a map of OTC, show that OTC Site 1 experiences the greatest CNEL due to traffic noise, between 65 to 75+ dB, occurring along the eastern portion due to the close proximity to Interstate 5 (Figure 3.13-4).

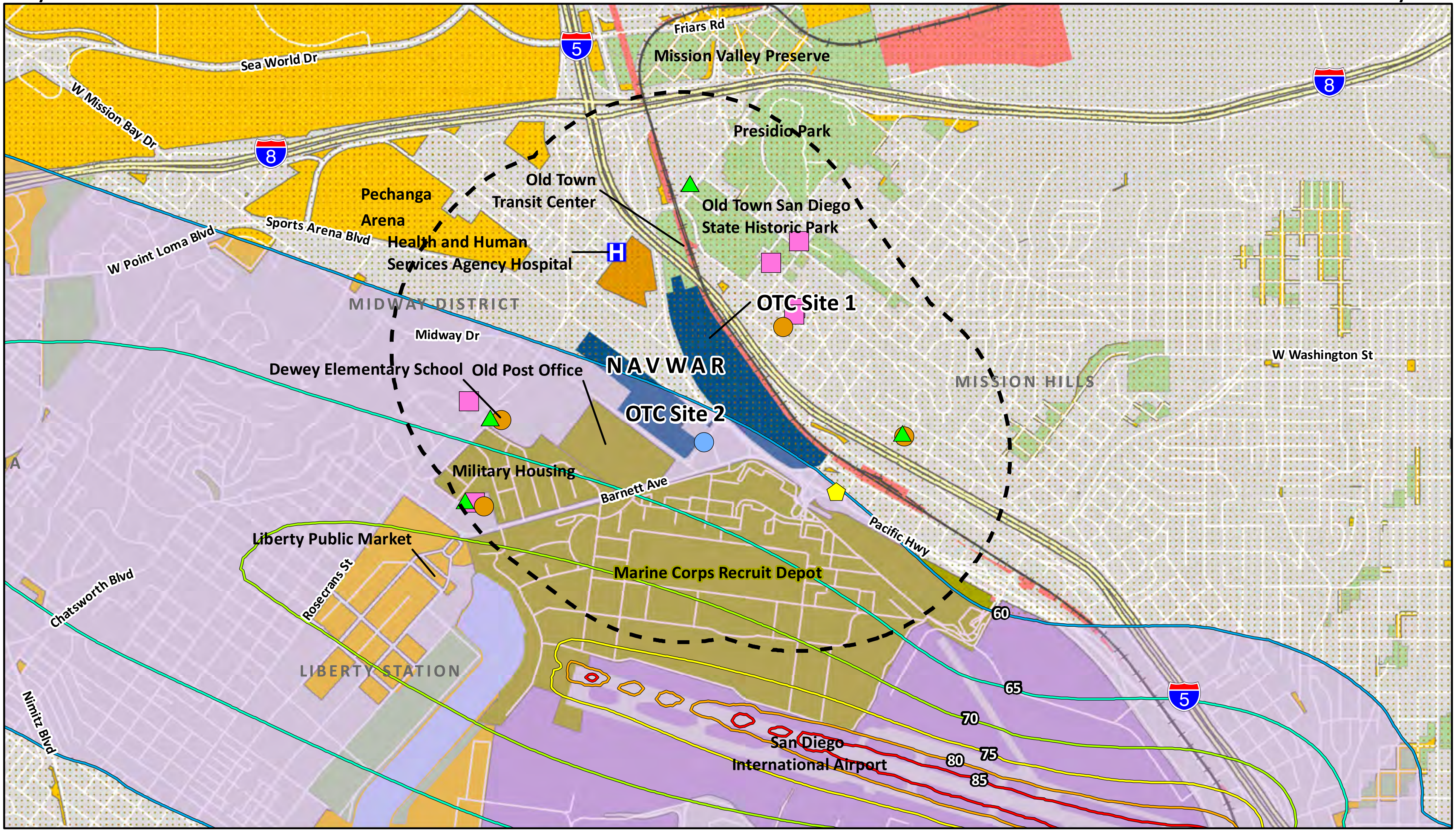
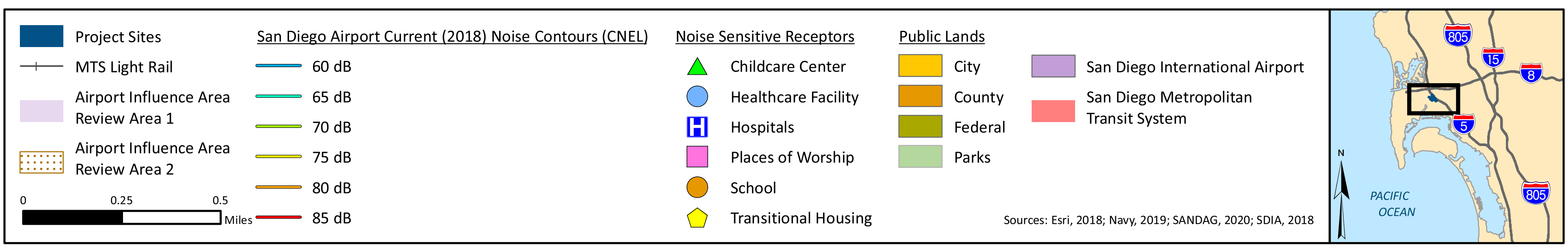


Figure 3.13-3. San Diego Airport Current Noise Contours



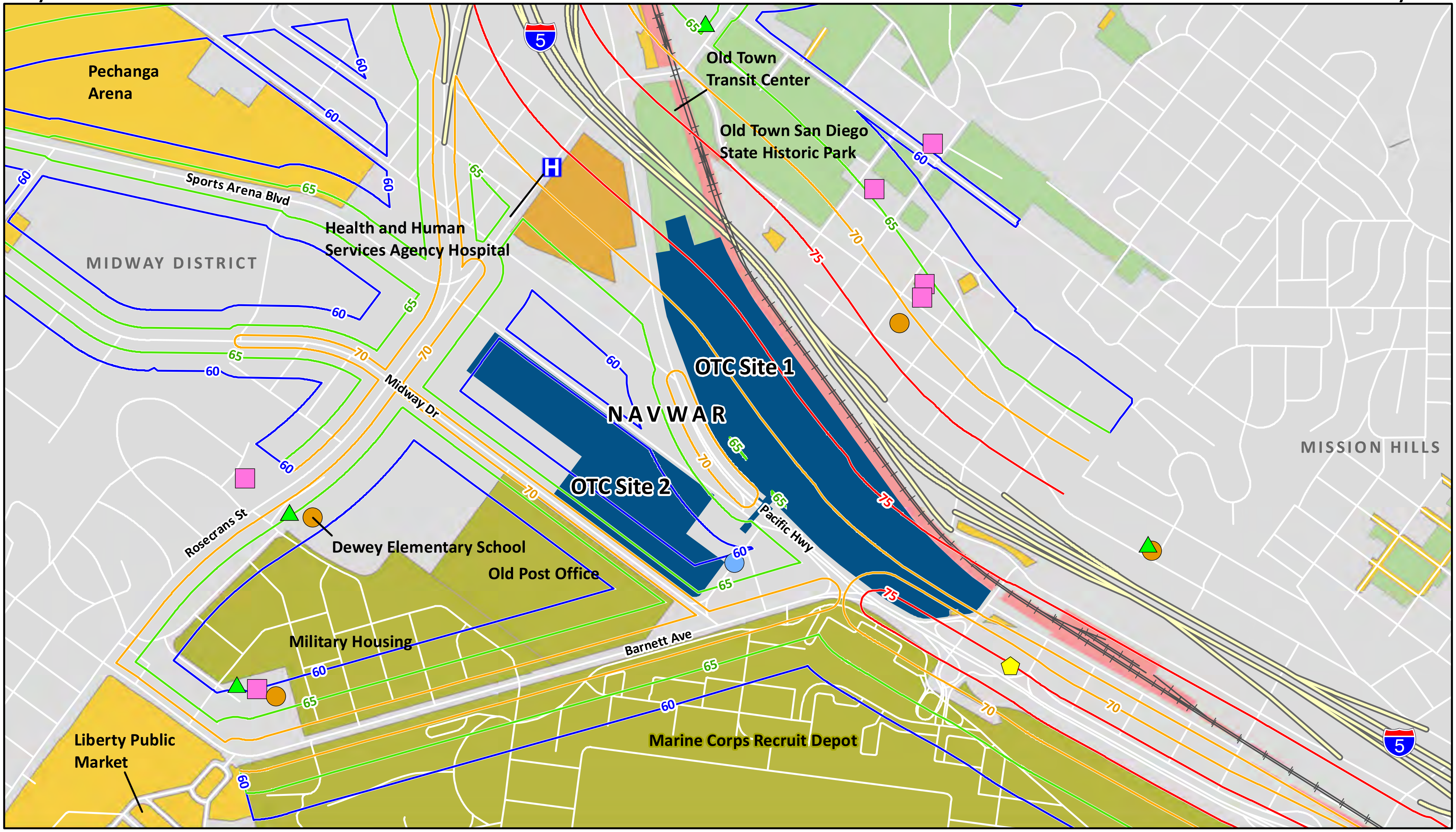
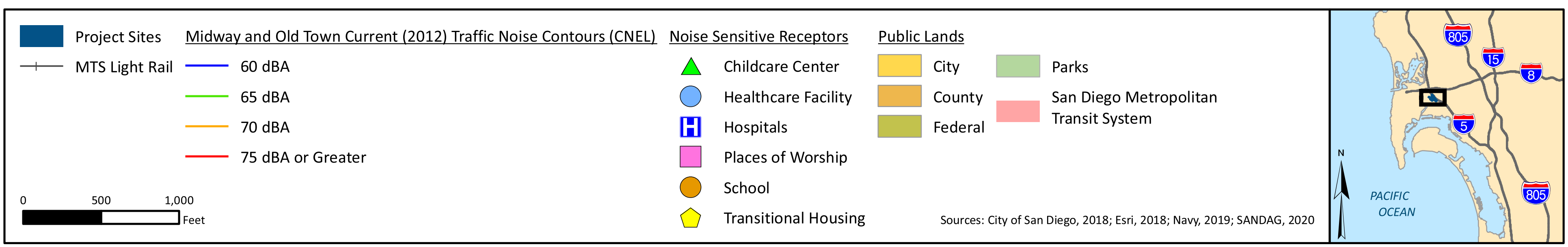


Figure 3.13-4. Current Traffic Noise Contours in the Vicinity of the Project Sites



CNEL at OTC Site 2 caused by traffic on city streets varies from approximately 65 dB to levels less than 60 dB within the interior of the site (City of San Diego, 2019a). Table 3.13-3 summarizes the existing traffic noise levels at nearby noise sensitive receptors.

Table 3.13-3 Existing Traffic Noise Levels at Nearest Noise Sensitive Receptors

Location	*Type*	*Existing Traffic Noise (dB CNEL)*
OTC	Mixed	<60 to 75+
Health and Human Services Agency	Hospital	65-75+
Dewey Elementary	School	60-65
Veteran’s Village of San Diego	Transitional Housing	70-75+
Barnett Avenue and Tuscaloosa Street	Residential	60-70
Moore Street and Arista Street	Residential	75+

OTC Site 1 and OTC Site 2 both include industrial and administrative office uses. The City of San Diego Noise Element defines industrial and office land uses as conditionally compatible up to 75 dB CNEL. Although OTC existing use is not required to meet the City of San Diego Noise Element, 75 dB CNEL represents a reasonable estimate of ambient noise for such activities at OTC.

3.13.4 Environmental Consequences

This section evaluates potential project impacts to the noise environment in the ROI. Factors considered in evaluating noise impacts include the intensity of project-related noise relative to the baseline noise conditions in the vicinity. Noise compatibility thresholds and data contained in local land use and development plans, such as the San Diego General Plan, provide additional context for the analysis. Noise generated during both construction and operations at OTC is considered and impacts to noise sensitive locations within the ROI are a key focus of the analysis. As described above in Section 3.13.2, OTC is located within the San Diego International Airport’s Airport Influence Area and is currently exposed to CNEL of 60 to 63 dB (see Figure 3.13-3) due to aircraft noise. It is assumed that airport-related noise and road traffic along Interstate 5 would continue to be the primary sources of noise in the ROI during and after the proposed buildout of each alternative. Long-term changes to aircraft operations are addressed in the cumulative section. This analysis also considers changes to traffic noise that would result from addition vehicular traffic, as detailed in the Transportation Impact Assessment, which is included as Appendix E.

3.13.4.1 No Action Alternative

Under the No Action Alternative, the Proposed Action Alternatives would not occur and there would be no change to baseline noise levels. Current noise-generating activities at OTC that contribute to the ambient noise environment would continue to occur, but the influence of such noise is inconsequential compared to noise from the airport and vehicle traffic on Interstate 5. Because no changes would occur under the No Action, no impacts would occur to the noise environment.

3.13.4.2 Alternative 1: NAVWAR-Only Redevelopment

Alternative 1 would include modernization at OTC to meet NAVWAR's facility requirements by potentially consolidating NAVWAR operations into existing buildings on OTC Site 1 requiring interior construction within two buildings. Another building would be demolished, and parking lots and fencing would be modified. The renovations would occur in eight phases (four phases to complete each building) and would continue for a period of 5 years.

Construction Noise

Under Alternative 1, construction noise at OTC and within the ROI associated with demolition, construction, repair, and/or renovation would increase while equipment would be operating. For example, noise from a jackhammer if operating along the OTC boundary would be experienced 200 feet away at the nearest noise sensitive receptor at a maximum noise level of 77 dB maximum sound level while a front end loader would generate 67 dB maximum sound level. These noise levels represent the worst conditions when equipment would operate closest to noise sensitive locations. Because OTC Site 1 and OTC Site 2 are each over a half-mile long, the distance between construction equipment and off-site noise sensitive receptors would often be far greater resulting in noise more typical of existing ambient levels. As described in Section 3.13.4, the City of San Diego municipal code prohibits construction between 7 p.m. and 7 a.m. on Mondays through Saturdays and all day on Sundays and holidays, which would minimize the impact of OTC construction noise in the surrounding area. All proposed construction activity would comply with those requirements or a noise variance would be obtained to allow work outside of that timeframe.

Land Use Compatibility and Noise from OTC Operations

Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the ROI. Existing aircraft noise levels at OTC (see Figure 3.13-3) would expose OTC to CNEL from less than 60 to 63 dB CNEL. The transportation impact analysis (Appendix E) estimated that daily vehicle trips to and from OTC would increase by 11 percent from the existing conditions, which would result in an approximate 1 percent increase in average daily trips on local streets. This increase would cause a negligible change to traffic noise contours and the OTC would be exposed to 60 to greater than 75 dB CNEL (see Figure 3.13-4). The building usage would include office, laboratory, and warehouse activities that would be compatible within that environment as long as office areas are located away from the northeast side closest to Interstate 5. The planned land uses at OTC and NAVWAR operations would not create any significant noise beyond existing conditions in the surrounding noise sensitive areas.

Conclusion

Construction noise experienced by noise sensitive receptors would increase beyond ambient levels while equipment would operate along the nearest OTC boundary, but would generally remain similar to existing ambient noise while equipment would operate in all other areas further away. The construction associated with the proposed OTC operations under Alternative 1 would not cause substantial long-term changes to the noise environment in the ROI because construction noise would be temporary and City of San Diego construction noise ordinances would be followed. Alternative 1 would not cause any land uses to become incompatible due to noise. Because aircraft activity at San Diego International Airport and vehicular traffic along Interstate 5 and city streets would remain the primary sources of noise and NAVWAR operations at OTC would remain largely unchanged there would not be significant long-term changes to noise created at OTC and experienced off-site. Therefore, Alternative 1 would result in less than significant impacts to the noise environment.

3.13.4.3 Alternative 2: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use

This alternative would include the construction of new Navy facilities for NAVWAR on OTC through a public-private development agreement. Under such an agreement, the remaining land on OTC would be developed as mixed-use with residential, hotel, office, and/or retail. Construction of the NAVWAR facility would occur in the initial 5 years, and additional construction of mixed-use development would continue through the remaining 25 years. Because the details of the proposed public-private mixed-use development are not currently known, this section analyzes the maximum potential building envelope that could be accommodated on OTC as described in Table 2-1.

Construction Noise

The area immediately surrounding OTC is primarily commercial and industrial use within an urban area but does include several noise sensitive receptors. At times when construction equipment, such as a jackhammer or front end loader, would operate along the OTC boundary nearest the noise sensitive receptors as close as 200 feet away, maximum noise would range from 67 to 77 dB maximum sound level. Noise sensitive receptors within this distance include the Veteran's Village, Health and Human Services Hospital, and a healthcare facility. The City of San Diego municipal code prohibits construction between 7 p.m. and 7 a.m. on Mondays through Saturdays and all day on Sundays and holidays, which would minimize the impact of construction activity-related noise at OTC on the surrounding area. All proposed construction activity would comply with those requirements or a noise variance would be obtained to allow work outside of that timeframe, but it may not be possible to fully mitigate off-site noise levels. Although construction would occur until 2050, it would occur in multiple waves of development rather than constantly over the entire period. Because of the long Alternative 2 construction timeframe noise levels experienced at noise sensitive receptors would be elevated beyond what could be considered temporary, like applied for Alternative 1. The nearest noise sensitive locations, such as the Veteran's Village and Health and Human Services Hospital, would be adversely affected and would experience elevated noise levels during extended periods of construction.

Land Use Compatibility and Noise from OTC Operations

Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the ROI. The transportation impact analysis determined that approximately 52,000 additional average daily vehicle trips would occur due to proposed changes to land use at OTC while considering decreases in Navy usage. This would result in the greatest increase up to 80 percent (+2.5 dB CNEL) on Hancock Street at Old Town Avenue, adjacent to Interstate 5. Pacific Highway at Kurtz Street and Midway Drive at Begley Drive would experience increases of greater than 50 percent (+2 dB CNEL). Table 3.13-4 presents the calculated increase in traffic noise at noise sensitive receptors based upon the percentage increase in traffic volume, which would range from close to zero up to 2 dB at OTC along Pacific Highway. The FHWA describes changes of 5 to 15 dB as substantial noise increases for Type I projects, defined as highway construction in new locations or substantial physical alteration to existing highways (23 CFR part 772). Although changes to noise levels caused by increased traffic volumes associated with Alternative 2 do not fall into the Type I FHWA category, this analysis utilizes the FHWA 5 dB threshold due to lack of any road noise standard specified by the Navy.

Table 3.13-4 Alternative 2 Traffic Noise Levels at Nearest Noise Sensitive Receptors

Location	Type	Alt 2 Traffic Noise (dB CNEL)	Change from No Action (dB CNEL)
OTC	Mixed	<60 to 75+	+ 1 to +2
Health and Human Services Agency	Hospital	65-75+	+ 1.5
Dewey Elementary	School	60-65	+ <0.5
Veteran's Village of San Diego	Transitional Housing	70-75+	+ 1
Barnett Avenue and Tuscaloosa Street	Residential	60-70	+ <0.5
Moore Street and Arista Street	Residential	75+	+ <0.5

Note: Alternative noise level reported to nearest 5 dB increment. The change in CNEL calculated from the percentage increase in ADT volume.

Unlike Alternative 1, Alternative 2 would create new noise sensitive uses at the OTC (i.e., residential) in areas currently exposed to elevated aircraft and traffic noise. OTC would be exposed to aircraft CNEL between 60 to 63 dB due to San Diego International Airport (see Figure 3.13-3). However, much of this residential development under Alternative 2 would not be a substantial concern because modern energy design recommendations on insulation and window types often exceed the noise level reductions specified by the City of San Diego for these exterior noise levels. However, traffic noise along Interstate 5 would require additional attention. Residential units may need to be placed far enough removed from Interstate 5 to avoid traffic noise levels above 75 dB CNEL, which are difficult to adequately attenuate using insulation or other construction materials. Additionally, the design of each residential unit would need to consider the traffic noise level (at locations within OTC exposed to 65 to 75 dB CNEL) to avoid noise impacts to future residents and to comply with current City of San Diego ordinances.

Conclusion

Construction noise experienced by noise sensitive receptors would increase beyond ambient levels at periods during development that may not be able to be mitigated. Unlike Alternative 1, the construction associated with Alternative 2 would occur over 30 years in multiple waves of development. Because construction schedules for that 30-year development window are not available at this time the construction noise cannot be concluded as insignificant. Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the OTC ROI in terms of long-term, permanent sources of noise. Noise from nearby city streets would remain a major contributor in the ROI which would increase up to 2.5 dB CNEL under Alternative 2 but not exceed the FHWA's definition of a substantial noise increase. The extended construction timeframe would cause increased noise levels at noise sensitive locations within 200 feet of OTC, such as the Veteran's Village, Health and Human Services Hospital, and a healthcare facility for an undetermined portion of the 30-year development window. Therefore, implementation of Alternative 2 would result in significant impacts to the noise environment.

3.13.4.4 Alternative 3: Public-Private Redevelopment–NAVWAR and Lower Density Mixed Use

This alternative is similar to what is described above for Alternative 2, but the development envelope for private development would be slightly reduced (see Table 2-1).

Construction Noise

Under Alternative 3, redevelopment activities are similar to those described under Alternative 2, but the development envelope for private development would be reduced. Alternative 3 would result in similar amounts of construction noise to Alternative 2. All proposed construction activity would comply with City of San Diego municipal code noise requirements or a noise variance would be obtained to allow work outside of the permitted hours, but it may not be possible to fully mitigate off-site noise levels. Although construction would occur until 2050, it would occur in multiple waves of development rather than constantly over the entire period. Because of the long Alternative 3 construction timeframe, noise levels experienced at noise sensitive receptors would be elevated beyond what could be considered temporary, like applied for Alternative 1. The nearest noise sensitive locations, such as the Veteran's Village, Health and Human Services Hospital, and a healthcare facility would be adversely affected and would experience elevated noise levels during extended periods of construction.

Land Use Compatibility and Noise from OTC Operations

Aircraft activity at San Diego International Airport would continue to affect the noise environment within the ROI and OTC would be exposed to aircraft CNEL between 60 to 63 dB (see Figure 3.13-3).

The transportation impact analysis determined that approximately 35,000 additional average daily vehicle trips would occur due to proposed changes to land use at OTC while considering decreases in Navy usage. This would result in the greatest increase of up to 50 percent (+2 dB CNEL) on Hancock Street at Old Town Avenue, adjacent to Interstate 5. Pacific Highway at Kurtz Street and Midway Drive at Begley Drive would experience increases of 30 to 40 percent (+1-2 dB CNEL). Table 3.13-5 presents the calculated increase in traffic noise at noise sensitive receptors based upon the percentage increase in traffic volume, which would range from close to zero up to 2 dB at OTC along Pacific Highway. These increases would be less than the FHWA's 5 to 15 dB defined as a substantial noise increase.

Table 3.13-5 Alternative 3 Traffic Noise Levels at Nearest Noise Sensitive Receptors

Location	*Type*	*Alt 3 Traffic Noise (dB CNEL)*	*Change from No Action (dB CNEL)*
OTC	Mixed	<60 to 75+	+ 1 to +2
Health and Human Services Agency	Hospital	65-75+	+ 1
Dewey Elementary	School	60-65	+ <0.5
Veteran's Village of San Diego	Transitional Housing	70-75+	+ 1
Barnett Avenue and Tuscaloosa Street	Residential	60-70	+ <0.5
Moore Street and Arista Street	Residential	75+	+ <0.5

Note: Alternative noise level reported to nearest 5 dB increment. The change in CNEL calculated from the percentage increase in ADT volume.

As with Alternative 2, Alternative 3 would create new noise sensitive uses at the OTC (i.e., residential) in areas currently exposed to elevated aircraft and traffic noise. However, much of this residential development under Alternative 3 would not be a substantial concern because modern energy design recommendations on insulation and window types often exceed the noise level reductions specified by the City of San Diego for these exterior noise levels. However, traffic noise along Interstate 5 would require additional attention. Residential units may need to be placed far enough removed from Interstate 5 to avoid traffic noise levels above 75 dB CNEL, which are difficult to adequately attenuate using insulation or other construction materials. Additionally, the design of each residential unit would need to consider the traffic noise level (at locations within OTC exposed to 65 to 75 dB CNEL) to avoid noise impacts to future residents and to comply with current City of San Diego ordinances.

Conclusion

Construction noise experienced by noise sensitive receptors would increase beyond ambient levels at periods during development that may not be able to be mitigated. Similar to Alternative 2, the construction associated with Alternative 3 would occur over 30 years in multiple waves of development. Because construction schedules for that 30-year development window are not available at this time the construction noise cannot be concluded as insignificant. Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the OTC ROI in terms of long-term permanent sources of noise. Noise from nearby city streets would remain a major contributor in the ROI which would increase up to 2 dB CNEL under Alternative 3 but not exceed the FHWA’s definition of a substantial noise increase. The extended construction timeframe would cause increased noise levels at noise sensitive locations within 200 feet of OTC, such as the Veteran’s Village, Health and Human Services Hospital, and a healthcare facility for an undetermined portion of the 30-year development window. Therefore, implementation of Alternative 3 would result in significant impacts to the noise environment.

3.13.4.5 Alternative 4: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use with a Transit Center

This alternative is similar to what is described above for Alternative 2, but a portion of OTC Site 1 would also be developed as a transit center. The development requirements for NAVWAR are the same as under Alternative 2. Under the public-private development agreement, the remaining land on OTC would be developed as mixed use with residential, hotel, office, and/or retail, as well as a transit center. Construction of the NAVWAR facility would occur in the first 5 years, and the additional mixed-use development would continue for 25 years. The transit center construction would last for 9 years, with operations beginning in the middle of development. Because the details of the proposed development are not currently known, this section analyzes the maximum potential building envelope that could be accommodated on OTC for Alternative 4 as described in Table 2-1.

Construction Noise

Under Alternative 4, redevelopment activities are similar to those described under Alternative 2, but the development envelope for private development would be reduced and a transit center would be located on OTC. Alternative 4 would result in similar amounts of construction noise to Alternative 2. All proposed construction activity would comply with City of San Diego municipal code noise requirements or a noise variance would be obtained to allow work outside of the permitted hours, but it may not be possible to fully mitigate off-site noise levels. Although construction would occur over 30 years, it would likely happen periodically rather than constantly over the entire period. Because of the long Alternative 4 construction timeframe, noise levels experienced at noise sensitive receptors would be elevated beyond what could be considered temporary, like applied for Alternative 1. The nearest noise sensitive locations, such as the Veteran’s Village and Health and Human Services Hospital, would be adversely affected and would experience elevated noise levels during extended periods of construction.

Land Use Compatibility and Noise from OTC Operations

Aircraft activity at San Diego International Airport would continue to affect the noise environment within the ROI and OTC would be exposed to aircraft CNEL between 60 to 63 dB (see Figure 3.13-3).

The transportation impact analysis determined that approximately 70,000 additional average daily vehicle trips would occur due to proposed changes to land use at OTC while considering decreases in Navy usage. This would result in the greatest increase of approximately 100 percent (+3 dB CNEL) on Hancock Street at Old Town Avenue, adjacent Interstate 5. Pacific Highway at Kurtz Street and Midway Drive at Begley Drive would experience increases of 70 to 100 percent (+2-3 dB CNEL). Table 3.13-6 presents the calculated increase in traffic noise at noise sensitive receptors based upon the percentage increase in traffic volume, which would range from close to zero up to 3 dB at OTC along Pacific Highway. These increases would be less than the FHWA's 5 to 15 dB defined as a substantial noise increase.

Table 3.13-6 Alternative 4 Traffic Noise Levels at Nearest Noise Sensitive Receptors

Location	***Type***	***Alt 4 Traffic Noise (dB CNEL)***	***Change from No Action (dB CNEL)***
OTC	Mixed	<60 to 75+	+ 1 to +3
Health and Human Services Agency	Hospital	65-75+	+ 2
Dewey Elementary	School	60-65	+ <0.5
Veteran's Village of San Diego	Transitional Housing	70-75+	+ 1
Barnett Avenue and Tuscaloosa Street	Residential	60-70	+ <0.5
Moore Street and Arista Street	Residential	75+	+ <0.5

Note: Alternative noise level reported to nearest 5 dB increment. The change in CNEL calculated from the percentage increase in ADT volume.

Similar to Alternatives 2 and 3, Alternative 4 would create new noise sensitive uses at the OTC (i.e., residential) in areas currently exposed to elevated aircraft and traffic noise. OTC would be exposed to aircraft CNEL between 60 to 63 dB due to San Diego International Airport (see Figure 3.13-3). However, much of this residential development under Alternative 4 would not be a substantial concern because modern energy design recommendations on insulation and window types often exceed the noise level reductions specified by the City of San Diego for these exterior noise levels. However, traffic noise along Interstate 5 would require additional attention. Residential units may need to be placed far enough removed from Interstate 5 to avoid traffic noise levels above 75 dB CNEL, which are difficult to adequately attenuate using insulation or other construction materials. Additionally, the design of each residential unit would need to consider the traffic noise level (at locations within OTC exposed to 65 to 75 dB CNEL) to avoid noise impacts to future residents and to comply with current City of San Diego ordinances.

Conclusion

Construction noise experienced by noise sensitive receptors would increase beyond ambient levels at periods during development that may not be able to be mitigated. Similar to Alternatives 2 and 3, the construction associated with Alternative 4 would occur over 30 years in multiple waves of development. Because construction schedules for that 30-year development window are not available at this time the construction noise cannot be concluded as insignificant. Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the OTC ROI in terms of long-term permanent sources of noise. Noise from nearby city streets would remain a major contributor in the ROI which would increase up to 3 dB CNEL under Alternative 4 but not exceed the FHWA's definition of a substantial noise increase. The extended construction timeframe would cause increased noise levels at noise sensitive locations within 200 feet of OTC, such as the Veteran's Village, Health and Human Services Hospital, and a healthcare facility for an undetermined portion of the 30-year development window. Therefore, implementation of Alternative 4 would result in significant impacts to the noise environment.

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

This alternative is similar to what is described above for Alternative 4, but the development envelope for private development would be slightly reduced (see Table 2-1).

Construction Noise

Under Alternative 5, redevelopment activities are similar to those described under Alternative 4, but the development envelope for private development would be reduced and a transit center would be located on OTC. Alternative 5 would result in similar amounts of construction noise to Alternative 4. All proposed construction activity would comply with City of San Diego municipal code noise requirements or a noise variance would be obtained to allow work outside of the permitted hours, but it may not be possible to fully mitigate off-site noise levels. Although construction would over 30 years, it would likely happen periodically rather than constantly over the entire period. Because of the long Alternative 3 construction timeframe, noise levels experienced at noise sensitive receptors would be elevated beyond what could be considered temporary, like applied for Alternative 1. The nearest noise sensitive locations, such as the Veteran's Village and Health and Human Services Hospital, would be adversely affected and would experience elevated noise levels during extended periods of construction.

Land Use Compatibility and Noise from OTC Operations

Aircraft activity at San Diego International Airport would continue to affect the noise environment within the ROI and OTC would be exposed to aircraft CNEL between 60 to 63 dB (see Figure 3.13-3).

The transportation impact analysis determined that approximately 55,000 additional average daily vehicle trips would occur due to proposed changes to land use at OTC while considering decreases in Navy usage. This would result in the greatest increase of approximately 100 percent (+3 dB CNEL) on Hancock Street at Old Town Avenue, adjacent Interstate 5. Pacific Highway at Kurtz Street and Midway Drive at Begley Drive would experience increases of 70 percent (+2.5 dB CNEL). Table 3.13-7 presents the calculated increase in traffic noise at noise sensitive receptors based upon the percentage increase in traffic volume, which would range from close to zero up to 3 dB at OTC along Pacific Highway. These increases would be less than the FHWA's 5 to 15 dB defined as a substantial noise increase.

Table 3.13-7 Alternative 5 Traffic Noise Levels at Nearest Noise Sensitive Receptors

Location	*Type*	*Alt 5 Traffic Noise (dB CNEL)*	*Change from No Action (dB CNEL)*
OTC	Mixed	<60 to 75+	+ 1 to +3
Health and Human Services Agency	Hospital	65-75+	+ 1
Dewey Elementary	School	60-65	+ <0.5
Veteran's Village of San Diego	Transitional Housing	70-75+	+ 1
Barnett Avenue and Tuscaloosa Street	Residential	60-70	+ <0.5
Moore Street and Arista Street	Residential	75+	+ <0.5

Note: Alternative noise level reported to nearest 5 dB increment. The change in CNEL calculated from the percentage increase in ADT volume.

Similar to Alternatives 2, 3, and 4, Alternative 5 would create new noise sensitive uses at the OTC (i.e., residential) in areas currently exposed to elevated aircraft and traffic noise. OTC would be exposed to aircraft CNEL between 60 to 63 dB due to San Diego International Airport (see Figure 3.13-3). However, much of this residential development under Alternative 5 would not be a substantial concern because modern energy design recommendations on insulation and window types often exceed the noise level reductions specified by the City of San Diego for these exterior noise levels. However, traffic noise along Interstate 5 would require additional attention. Residential units may need to be placed far enough removed from Interstate 5 to avoid traffic noise levels above 75 dB CNEL, which are difficult to adequately attenuate using insulation or other construction materials. Additionally, the design of each residential unit would need to consider the traffic noise level (at locations within OTC exposed to 65 to 75 dB CNEL) to avoid noise impacts to future residents and to comply with current City of San Diego ordinances.

Conclusion

Construction noise experienced by noise sensitive receptors would increase beyond ambient levels at periods during development that may not be able to be mitigated. Similar to Alternative 4, the construction associated with Alternative 5 would occur over 30 years in multiple waves of development. Because construction schedules for that 30-year development window are not available at this time the construction noise cannot be concluded as insignificant. Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the OTC ROI in terms of long-term, permanent sources of noise. Noise from nearby city streets would remain a major contributor in the ROI which would increase up to 3 dB CNEL under Alternative 5 but not exceed the FHWA's definition of a substantial noise increase. The extended construction timeframe would cause increased noise levels at noise sensitive locations within 200 feet of OTC, such as the Veteran's Village, Health and Human Services Hospital, and a healthcare facility for an undetermined portion of the 30-year development window. Therefore, implementation of Alternative 5 would result in significant impacts to the noise environment.

3.13.4.7 Summary of Proposed Management Practices, Potential Monitoring, and Potential Mitigation

No management practices or monitoring measures would be warranted for noise based on the analysis presented in Section 3.13.3.

Proposed Mitigation

- NOI MIT-1. Construction noise would be mitigated as much as practical by following all city ordinance on construction hours and ensuring appropriate noise reducing equipment (i.e., mufflers) are functioning properly.
- NOI MIT-2. Construction of noise sensitive facilities, namely residential, would be designed to meet city-specified interior noise level targets through the use of building materials and appropriate construction methods.

3.13.4.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be no or less than significant impacts from noise on the surrounding environment resulting from implementation of the No Action Alternative or Alternative 1. There would be significant impacts from noise resulting from implementation of Alternative 2, Alternative 3, Alternative 4, or Alternative 5 from construction noise given the long timeframes and due to higher post-construction traffic volumes generating increased noise.

3.14 Geological Resources

This discussion of geological resources includes topography, geology, soils, and geologic hazards. Topography is the elevation, slope, aspect, and surface features within a given area. Long-term geological, seismic, erosional, and depositional processes influence the topographic relief of an area. The geology of an area includes surface and bedrock materials, orientation of rock units, and unique structures that may contain valuable geological resources such as mineral deposits, petroleum reserves, sand, and gravel (for construction), or fossils. Mineral resources can be metallic or non-metallic earth materials and energy deposits that can be extracted for a useful purpose, such as iron ore that can be refined to make steel, gravel that can be used to build roads, geothermal resources, or petroleum and natural gas reserves. Soil refers to unconsolidated and weathered earthen materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, liquefaction potential, and erodibility can all determine the ability of the ground to support structures and facilities. Geologic hazards considered include earthquakes, liquefaction, tsunamis, landslides, subsidence, and radon gas (see Section 3.14.2.4 below). The ROI considered for geological resources includes OTC and surrounding area.

3.14.1 Regulatory Setting

Laws and regulations applicable to geological resources include the following, as detailed in Chapter 1:

- Farmland Protection and Policy Act
- Clean Water Act (33 U.S.C. section 1251 et seq.)
- Alquist-Priolo Earthquake Fault Zoning Act (California Public Resource Code section 2621-2630 1972 amended 1994)
- California Building Standards Code (Title 24, California Code of Regulations)
- The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, section 2690-2699.6)

3.14.2 Affected Environment

The following sections provide a description of the existing conditions for geological resources at OTC.

3.14.2.1 Topography

OTC is located within the low-lying, relatively level, coastal plain north of the San Diego Bay at an average elevation of approximately 10 to 15 feet above mean sea level. OTC is characterized as developed and relatively flat. The topography in the surrounding area gently slopes upward to the east along a series of wave-cut marine terraces that increase in age and elevation with increasing distance from the coastline.

3.14.2.2 Geology

Regional Geology

OTC is located within the coastal plains of the Peninsular Ranges Geomorphic Province of southern California. The province, which is characterized by northwest-trending mountain ranges, extends approximately 125 miles from the Transverse Ranges and the Los Angeles Basin, southward to the Mexican Border. The westernmost portion of the province in San Diego County generally consists of Upper Cretaceous-, Tertiary-, and Quaternary-age sedimentary rocks composed of marine, paralic, and continental claystone, siltstone, sandstone, and conglomerate (Kennedy and Tan, 2008).

Site Geology

The geologic features in the vicinity of OTC are provided in Figure 3.14-1. OTC is located in an area that formerly consisted of tidal mudflats of the northern portion of San Diego Bay and alluvial deposits from the San Diego River. In the past, the meandering San Diego River flowed into San Diego Bay, with the river outlet likely located at or in the vicinity of OTC at various times. This configuration existed most recently in the nineteenth century for a period of nearly 50 years (Smythe, 1908), which may have resulted in deposition of river sediments at or in the vicinity of OTC.

The uppermost geological unit at OTC is artificial fill from the late Holocene epoch (Kennedy and Tan, 2008). The artificial fill deposits are generally poorly to well consolidated, poorly sorted, permeable, and composed of sand, silt, gravel, and clay derived from the local bay and riverbeds. These deposits may include compacted engineered or non-compacted, non-engineered fill (Kennedy and Tan, 2008). A geotechnical investigation performed at the main entrance gate to OTC Site 1 found artificial fill material to a depth of approximately 12 feet below ground surface (Ninyo & Moore Geotechnical and Environmental Sciences Consultants, 2002). However, the thickness of artificial fill likely varies across OTC Site 1 and OTC Site 2 with a maximum total thickness of fill up to 20 feet (SANDAG, 2020a). Artificial fill materials are considered to have no paleontological resource sensitivity because the material has been disturbed and no longer has stratigraphic/geological context (San Diego Natural History Museum, 2013).

The artificial fill overlies older Holocene-age bay, estuarine, and river sediments consisting mainly of poorly consolidated sand, silt, and clay (Kennedy and Tan, 2008). Deposits underlying the artificial fill at OTC likely include the following surficial deposits mapped by Kennedy and Tan (2008):

- Young alluvial floodplain deposits (Qya) (Holocene and late Pleistocene); poorly consolidated, poorly sorted, permeable deposits of sandy, silty, or clay-bearing alluvium.
- Paralic estuarine deposits (Qpe) (late Holocene); unconsolidated estuarine deposits composed mostly of fine-grained sand and clay.
- Undivided marine deposits in offshore region (Qmo) (late Holocene); bay sediments composed mostly of very fine- to medium-grained sand and silt.
- Formations, such as Qya and Qmo, that are relatively young in age and/or have a high-energy depositional history, are unlikely to produce unique fossil remains, rarely produce fossil remains of scientific significance, and have low sensitivity for fossils (County of San Diego, 2007).

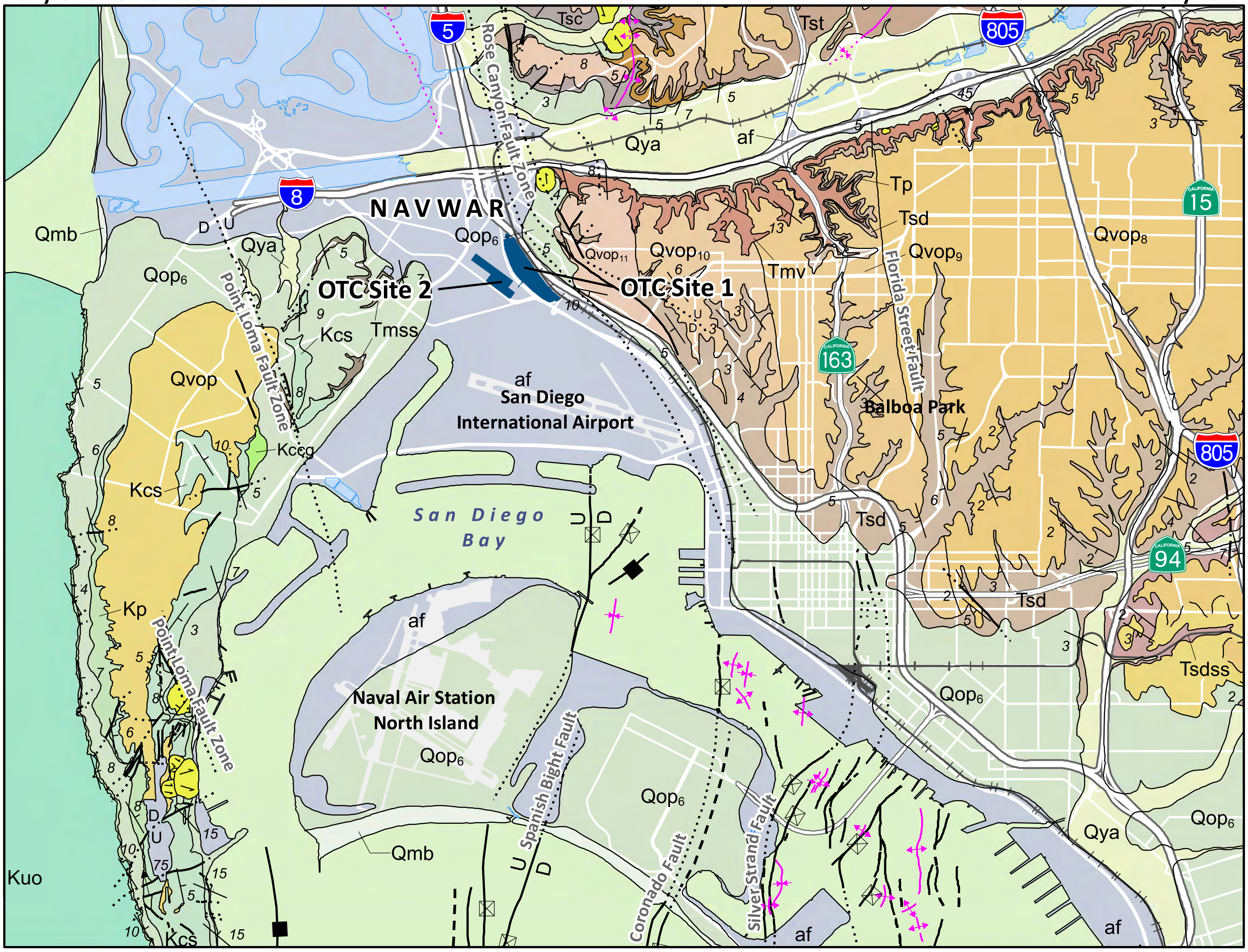


Figure 3.14-1. Geological Features in the Vicinity of the Project Sites

Project Sites

MTS Light Rail

Anticline - Solid where well defined; dashed where approximately located; dotted where concealed. Arrow indicates direction of axial plunge.

Syncline - Solid where well defined; dashed where approximately located; dotted where concealed. Arrow indicates direction of axial plunge.

Fault - Solid where accurately located; dashed where approximately located; dotted where concealed. U = upthrown block, D = downthrown block. Ages of faults are indicated as follows:

- cuts strata of Holocene age symbol
- cuts strata of Late Quaternary age symbol

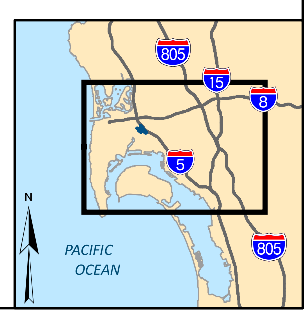
70 Strike and Dip of Inclined Beds

Note: Please see Figure 3.14-3, Alquist-Priolo Earthquake Fault Zones in the Vicinity of the Project Sites, for details on the active Alquist-Priolo faults.

<u>Surficial Deposits and Bedrock Units</u>

- af - Artificial fill
- Qls - Landslide deposits, undivided
- Qmb - Marine beach deposits
- Qmo - Undivided marine deposits in offshore region
- Qya - Young alluvial flood-plain deposits
- Qyc - Young colluvial deposits
- Qoa - Old alluvial flood-plain deposits, undivided
- Qop7 - Old paralic deposits, undivided: Unit 7
- Qop6 - Old paralic deposits, undivided: Unit 6
- Qvop - Very old paralic deposits, undivided
- Qvop11 - Very old paralic deposits, undivided: Unit 11
- Qvop10 - Very old paralic deposits, undivided: Unit 10
- Qvop9 - Very old paralic deposits, undivided: Unit 9
- Qvop8 - Very old paralic deposits, undivided: Unit 8
- Qvop9a - Very old paralic deposits, undivided: Unit 9a
- Tsd - San Diego Formation, undivided
- Tsdss - San Diego Formation, marine sandstone
- Tp - Pomerado Conglomerate
- Tmv - Mission Valley Formation
- Tst - Stadium Conglomerate
- Tf - Friars Formation
- Tsc - Scripps Formation
- Tmss - Mount Soledad, sandstone
- Kcs - Cabrillo Formation, sandstone
- Kccg - Cabrillo Formation, cobble conglomerate
- Kp - Point Loma Formation
- Kuo - Undivided rocks of the Roserio Group in the offshore area
- Water

0 0.75 1.5 Miles



Sources: Esri, 2018; Kennedy and Tan, 2008; Navy, 2019; SANDAG, 2020

Other surficial deposits and sedimentary rocks mapped in the vicinity of OTC by Kennedy and Tan (2008) include:

- Old paralic deposits, Unit 6 (late to middle Pleistocene epoch); poorly sorted, moderately permeable, reddish-brown, interfingered strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone, and conglomerate. Located to the east of Interstate 5 and to the west of OTC.
- Very old paralic deposits, Unit 11 (middle to early Pleistocene epoch); poorly sorted, moderately permeable, reddish-brown, interfingered strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone, and conglomerate. Located to the east of Interstate 5 at the base of the Mission Hills.
- San Diego Formation (early Pleistocene and late Pliocene); undivided medium-grained, poorly indurated fossiliferous marine sandstone and reddish-brown, transitional marine and non-marine pebble, and cobble conglomerate. In the vicinity of OTC, this formation is located mostly east of Interstate 5 at the base of the Mission Hills.
- The Mount Soledad Formation (middle Eocene epoch); light-brown, medium-grained sandstone. In the vicinity of OTC, this formation is located to the west.

Mineral Resources

There are no known significant mineral resource deposits at OTC or in the general vicinity of OTC (California Department of Conservation, 1996). In addition, there are no active or abandoned mines in OTC or the vicinity (U.S. Geological Survey, 2020a). There may be potential for gravel/sand mineral resources at OTC but these would not be economically viable for development.

3.14.2.3 Soils

Soils at OTC are classified as Urban Land (U.S. Department of Agriculture Natural Resources Conservation Service, 2020). The following sections describe the general characteristics of soil types known to be present at OTC or in the vicinity. Contaminated soils are discussed in Section 3.7, *Hazardous Materials and Waste*.

Expansive Soils

Expansive soils have a substantial amount of clay particles that can cause the soil to expand when water is added and shrink when dried out. The change in soil volume can cause structures founded on expansive soil to move unevenly and crack. Artificial fill near the main entrance gate to OTC Site 1 generally consists of moist silt and silty fine sand underlain by moist to saturated, loose to very stiff, silt layered with medium dense, fine silty sand. Bay deposits underlying the fill material generally consist of saturated, firm, plastic sandy silt to medium dense, silty fine sand (Ninyo & Moore Geotechnical and Environmental Sciences Consultants, 2002). Other investigations as part of the IR site near Buildings 2 and 3 along the northeast edge of OTC Site 1 found silty sand with gravels to a depth of approximately 6 feet below ground surface (Hushmand Associates, Inc., 2014). This type of soil with high sand content has low expansion potential (SANDAG, 2014a).

Compressible Soils

Soils can compress due to various reasons, including placement of new loads, variation of groundwater table elevation, and densification due to vibration. Granular soils tend to compress elastically, and the settlement occurs relatively fast after the load has been applied. Cohesive soils, depending on their composition and the drainage conditions, can take several years to fully consolidate. The placement of artificial fill is likely to have caused settlement in the underlying alluvial, estuarine, and bay deposits. Settlement at OTC is considered completed by now (SANDAG, 2020a), but additional settlement may be triggered if new loads are placed directly on top of the ground surface, or if dewatering results in a drawdown of the groundwater table (SANDAG, 2020a).

Collapsible Soils

Collapsible soils undergo a volume reduction when the pore spaces become saturated causing loss of grain-to-grain contact and possibly dissolution of interstitial cement holding the grains apart. The weight of overlying structures can cause uniform or differential settlement, and consequently damage to foundations and walls. Due to the generally finer-grained nature of the artificial fill and underlying bay, estuarine, and river sediments at OTC, these deposits are more susceptible to consolidation resulting in structure settlement (Wilson Geosciences Inc., 2011).

Corrosive Soils

Corrosive soils contain chemical constituents that can react with construction materials, (e.g., concrete and metals containing iron), which may damage foundations and buried pipelines. The corrosivity of soils is related to several key parameters: soil resistivity, presence of chlorides and sulfates, oxygen content, and pH level. The geotechnical investigation at the main entrance gate to OTC Site 1 tested representative on-site soil samples to evaluate pH, minimum electrical resistivity, and chloride and sulfate content and found them to be non-corrosive (Ninyo & Moore Geotechnical and Environmental Sciences Consultants, 2002).

Agriculturally Productive Soils

OTC is categorized as Urban and Built-up Land and there are no mapped areas of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance at OTC or in the vicinity (California Department of Conservation, 2014).

3.14.2.4 Geologic Hazards

Seismicity

The California Geological Survey classifies faults as either “active” or “potentially active,” according to the Alquist-Priolo Earthquake Fault Zoning Act and the Fault Activity Map of California (Jennings and Bryant, 2010). The California Geological Survey now defines an “active fault” as one for which there is evidence of surface displacement during the Holocene epoch (within the last 11,700 years) and a “potentially active fault” as one for which there is evidence of surface displacement only during pre-Holocene time (older than 11,700 years, generally within the Quaternary period of 1.6 million years ago) (California Geological Survey, 2018). These definitions are used as the basis for delineating Alquist-Priolo Earthquake Fault Zones. The California Geological Survey (2021) has recently re-evaluated portions of the Rose Canyon Fault Zone in San Diego and recommends the establishment of additional Alquist-Priolo Earthquake Fault Zones within the ROI.

Seismicity refers to the geographic and historical distribution and intensity of earthquakes. OTC lies in the seismically active coastal San Diego County region. Geologic hazards associated with fault activity include surface fault rupture, strong ground motion or shaking, and liquefaction (i.e., where the soil shakes until it is unstable).

Major active or potentially active faults in San Diego County east of OTC include the San Jacinto Fault, Elsinore Fault, La Nacion Fault, and Rose Canyon Fault (Figure 3.14-2). Major faults in the general San Diego area west of OTC include the Point Loma Fault, Palos Verdes-Coronado Bank Fault, San Diego Trough Fault, and San Clemente Fault (Jennings and Bryant, 2010; Southern California Earthquake Data Center, 2020a). Table 3.14-1 provides details on significant faults (or fault zones) in proximity to OTC and the San Diego Area.

Table 3.14-1 Major Faults in the Vicinity of OTC and the San Diego Area

Fault Name[1]	*Approximate Fault Length (miles)*	*Approximate Distance to OTC (miles)*	*Probable Magnitude (M_w) Potential*[2]	*Slip Rate (inch/year)*
Newport Inglewood-Rose Canyon	130	0.1	6.0-7.4[3]	0.04
Coronado Bank	116	11	7.3-7.4	0.12
San Diego Trough	103	23	7.5	0.04-0.2
San Miguel-Vallecitos	62	35	6.8	0.01
Elsinore	111	42	6.5-7.5	0.04
San Clemente	130	47	7.1-7.5	0.06
Palos Verdes	62	55	7.2-7.3	0.08-0.16
San Jacinto	130	64	6.5-7.5	0.2-0.6
Sierra Juarez	62	70	7.1	undetermined
Laguna Salada	62	77	7.2-7.3	0.14
Agua Blanca	80	80	6.0-7.0	0.08-0.16

Notes: [1] Fault "zones" are used here as the same geologic fault feature may include multiple discretely named fault sections or (assumed) extensions.

[2] M_w = Moment-magnitude scale, which measures the amount of energy released during a seismic event. M_w has been the official scale used for earthquakes by the U.S. Geological Survey since 2002.

[3] The Rose Canyon Fault Zone in the San Diego area could produce a maximum likely earthquake of magnitude 6.2 to 7.0 (County of San Diego, 2017).

Sources: Hirabayashi et al., 1996; SANDAG 2014; Ortega-Rivera et al., 2018; SANDAG, 2020a; Southern California Earthquake Data Center, 2020b; U.S. Geological Survey, 2020b.

The three main fault zones closest to OTC are the Rose Canyon, La Nacion, and Point Loma Fault Zones (see Figure 3.14-1). The Rose Canyon Fault Zone is considered active by the California Geological Survey and more recent studies (Jennings and Bryant, 2010; Rockwell et al., 2018; Singleton et al., 2019; California Geological Survey, 2021) and could produce a maximum likely earthquake of magnitude 6.2 to 7.0 (County of San Diego, 2017). La Nacion and Point Loma Fault Zones are considered potentially active (Jennings and Bryant, 2010).

The Rose Canyon Fault Zone is the most significant seismic hazard to the entire coastal Metropolitan region of San Diego, due to its proximity to areas of high population (County of San Diego, 2017). The fault zone is considered the southern extension of the Newport Inglewood Fault Zone and parallels the northern San Diego County coastline within approximately 2 to 6 miles until coming ashore near La Jolla Shores (SANDAG, 2011a).

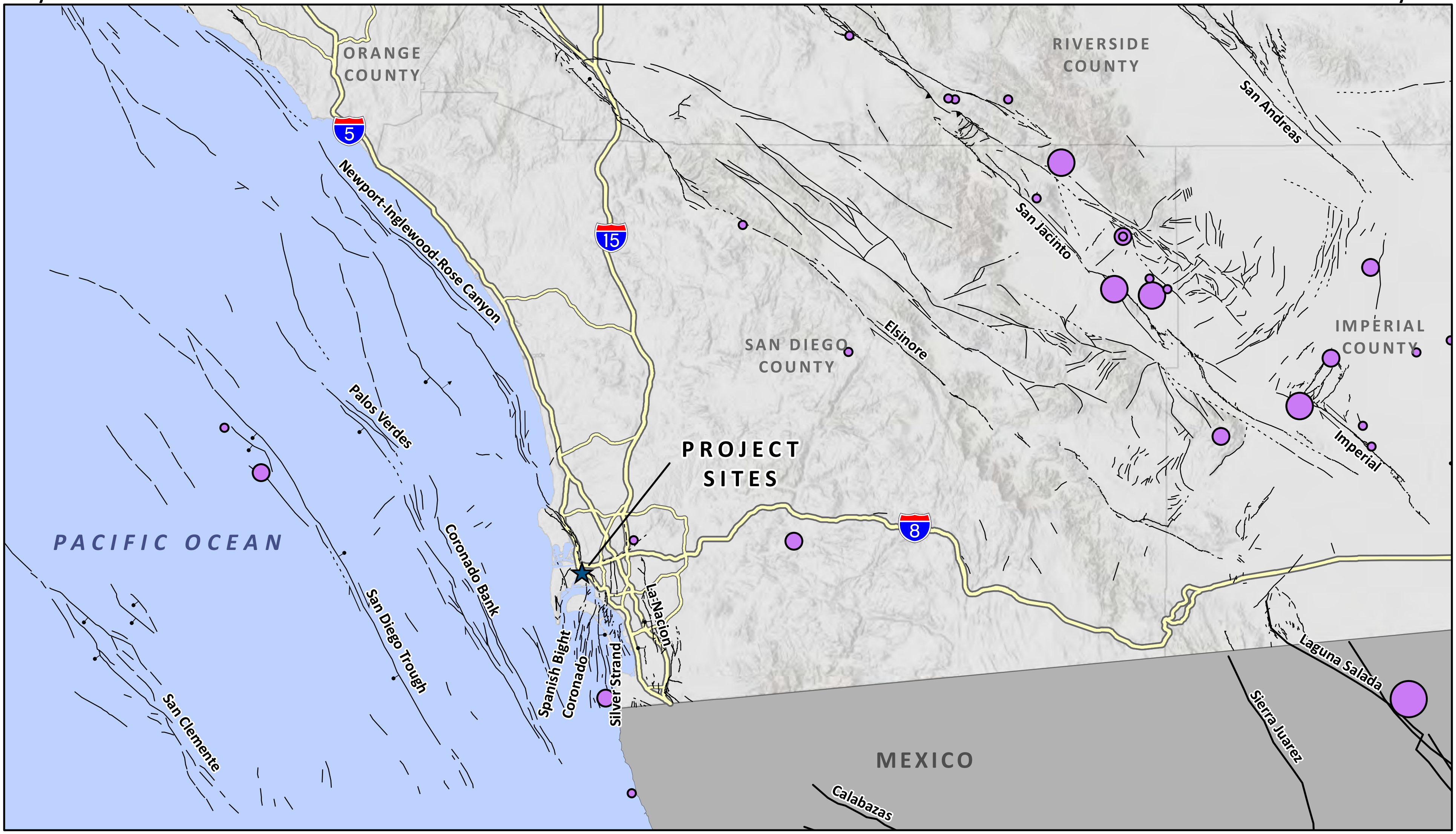


Figure 3.14-2. Quaternary Faults and Historic Earthquakes

Project Sites

Fault Type - Solid where well located; long dashed where approximately located; short dashed where inferred; dotted where concealed

0 12.5 25 Miles

Earthquake Epicenter Data (1800-1999)

- 5.5 - 5.9
- 6.0 - 6.4
- 6.5- 6.9
- Greater than 7.0

Note: Local fault names are from the Geologic Map of San Diego (Kennedy and Tan, 2008). Fault names in Mexico are from the Mexico Quaternary Fault Database (Government of Mexico, 2020).

Sources: California Department of Conservation, 2000; Esri, 2018; Government of Mexico, 2020; Jennings and Bryant, 2010; Kennedy and Tan, 2008; Navy, 2019; SANDAG, 2020

The onshore segment trends through Rose Canyon, through Old Town San Diego, and then southward towards San Diego Bay. The Rose Canyon Fault Zone continues southward as several active splays, or constituent faults, through San Diego Bay towards northern Baja where it appears to connect with either the offshore Descanso and onshore Agua Blanca Fault Zone (Rockwell, 2011), or the Vallecitos-San Miguel Fault Zone (County of San Diego, 2017; SANDAG, 2020a). A consequence of where the Rose Canyon Fault bends south and steps to the Descanso Fault is a minor component of normal faulting along the La Nacion Fault Zone adjacent to this step (Rockwell, 2010).

The Rose Canyon Fault Zone comprises a complex system of many sub-parallel fault traces, both active and potentially active, that occupy a band 0.5 mile to 3 miles wide. Several miles to the north and to the south of OTC, the Rose Canyon Fault Zone is considered active (Jennings and Bryant, 2010). The section of the fault near OTC is considered active by the City of San Diego (2018d) and the County of San Diego (2011) in their respective Safety Elements. A recent study revealed that the section of the fault zone in the area of Old Town has ruptured several times during the late Holocene, as recently as 1862 (magnitude approximately 6), with an average recurrence interval of approximately 700 years (Singleton et al., 2019).

The southern portion of the Rose Canyon Fault Zone splays across San Diego Bay into three constituent faults: the Spanish Bight Fault, the Coronado Fault, and the Silver Strand Fault (Figure 3.14-1) (Rockwell et al., 2018). The Spanish Bight Fault has been identified as an active fault comprising a relatively narrow band of sub-parallel faults that appear to splay from the Rose Canyon Fault Zone (SANDAG, 2020a). The known fault traces extend south from the San Diego International Airport and through Naval Air Station North Island. The configuration of the fault zone north of the airport, including the area near OTC, is generally not well defined, in part because surface exposures are mostly concealed by very young deposits and artificial fill (Figure 3.14-1). A Fault Hazard Study prepared for the San Diego International Airport in 2017 determined that the Spanish Bight Fault appears to be diminishing and dying out to the north. However, a northward continuation of an active segment of the Spanish Bight Fault was identified at the San Diego International Airport, approximately 1.2 miles south of OTC (San Diego County Regional Airport Authority, 2019). The California Geological Survey recently issued a Fault Evaluation Report to re-evaluate portions of the Rose Canyon Fault Zone (California Geological Survey, 2021). The Fault Evaluation Report approximated the location of the Old Town section of the Rose Canyon Fault Zone just outside of OTC Site 1, resulting in a newly identified Alquist-Priolo Earthquake Fault Zone within the southeast portion of OTC Site 1 (Figure 3.14-3). With this new designation and because the exact alignment of the Rose Canyon Fault Zone is unknown in this area and could transect OTC, an extensive fault hazard investigation would need to be performed for OTC, in accordance with California Geological Survey Special Note 42 (California Geological Survey, 2018).

Liquefaction and Lateral Spreading

Liquefaction is the phenomenon whereby soils lose shear strength and exhibit fluid-like flow behavior. Loose, granular soils are most susceptible to these effects, with liquefaction generally restricted to saturated or near-saturated soils at depths of less than 50 feet below ground surface. Liquefaction most typically results from seismic ground acceleration, and along with related effects such as dynamic or differential settlement (i.e., varying degrees of settlement over short distances) can potentially result in significant impacts to surface and subsurface facilities. Liquefaction can result in structural damage or settling. OTC is considered vulnerable to liquefaction due to the presence of relatively shallow groundwater and loose artificial fill, alluvium, estuarine deposits, and bay deposits (SANDAG, 2020a).

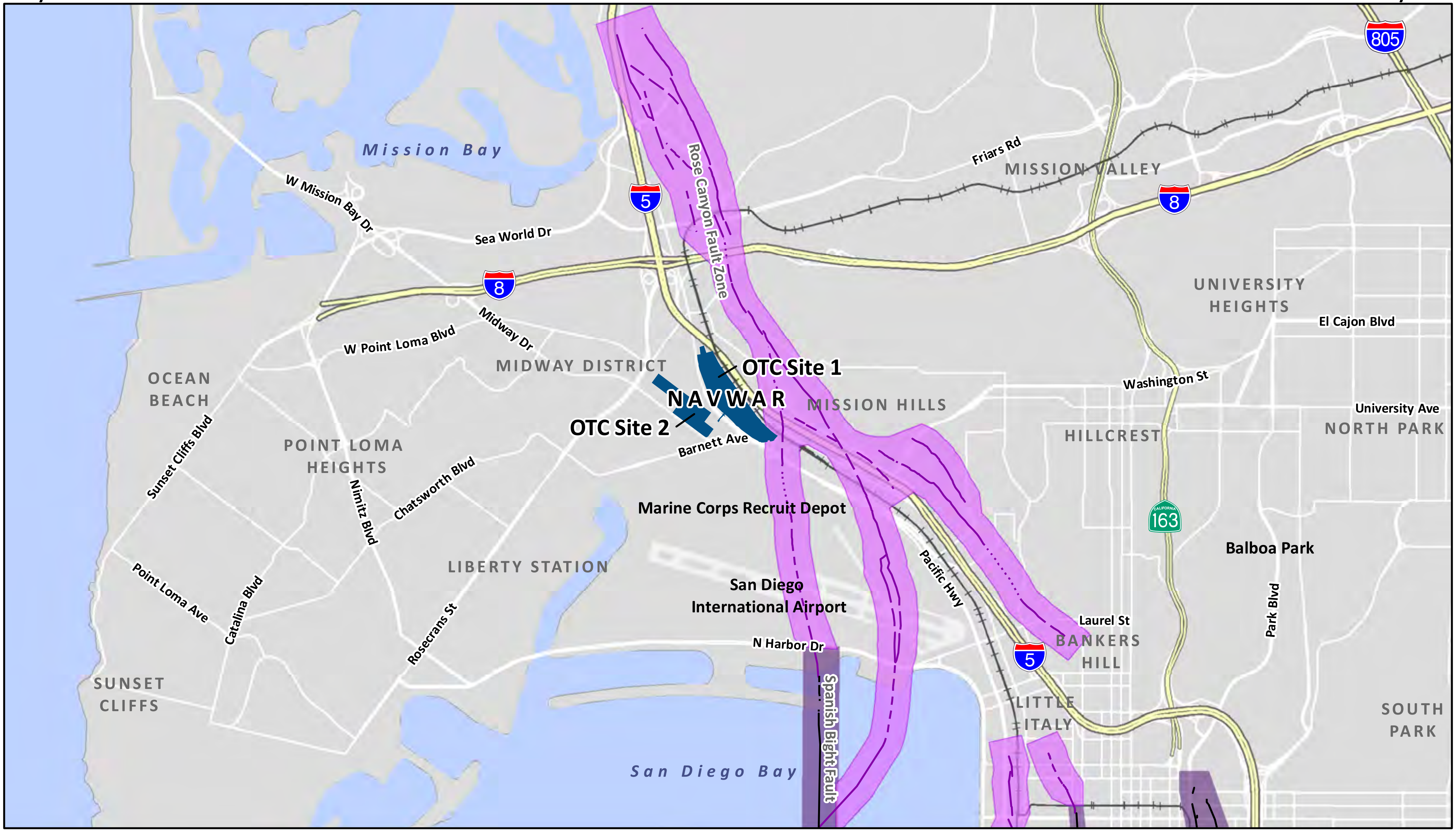


Figure 3.14-3. Alquist-Priolo Earthquake Fault Zones in the Vicinity of the Project Sites

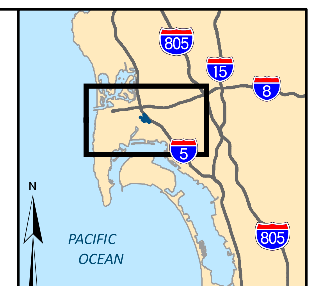
Project Sites
MTS Light Rail
Recommended Alquist-Priolo Earthquake Fault Zone
Existing Alquist-Priolo Earthquake Fault Zone

0 0.5 1 Miles

Active Fault Traces -
Solid where accurately located;
long dashed where approximately located;
short dashed where inferred;
dotted where concealed

Note: Recommended Alquist-Priolo Earthquake Fault Zone data are from the California Geological Survey Fault Evaluation Report 265, The Rose Canyon Fault in the Point Loma and La Jolla 7.5 Minute Quadrangles San Diego County, California. These preliminary review maps will be finalized after the public review period closes in May 2021 and made publicly available in August 2021. The report and maps can be viewed on the California Department of Conservation website: https://www.conservation.ca.gov/cgs/preliminary-releases.

Sources: California Geological Survey, 2021; California Geological Survey, 2003; Esri, 2018; Navy, 2019; SANDAG, 2020



The City of San Diego Seismic Safety Study identifies OTC as an area with a high potential for liquefaction due to shallow groundwater, major drainages, and hydraulic fills (Figure 3.8-1) (City of San Diego, 2008a).

When combined with a sloping ground or “free faces,” such as bridge abutments, the loss of soil shear strength and stiffness that is associated with liquefaction can result in lateral spreading displacements (a form of seismic slope instability) that can impose lateral loads upon the foundations. Due to the location of OTC on relatively flat terrain, the risk of lateral spreading is considered to be low.

Tsunamis

Tsunamis are long, high-velocity ocean waves that are typically generated by sudden movements of the ocean bottom during submarine earthquakes, landslides, or volcanic activity. Tectonically, the Pacific Ocean rim is considered highly active, resulting in a high occurrence of tsunamis (California Geological Survey, 2020). California is most subject to tsunamis generated by the Aleutian Trench and Peru-Chile Trench source regions. Areas of southern California that are south of Point Conception are less susceptible to severe tsunamis than areas that lie north. In addition, the Point Loma Peninsula and Coronado Island both act as natural landform barriers that would dissipate tsunami wave energy directed toward OTC (California Geological Survey, 2020). OTC is not within the tsunami inundation area mapped by the California Emergency Management Agency (2009) (Figure 3.8-1).

Landslides

Landslides are deep-seated ground failures in which a large arcuate or block shaped section of a slope detaches and slides downhill. Due to the location of OTC on relatively flat terrain, it is not considered prone to landslides (SANDAG, 2020a).

Subsidence

Ground subsidence can occur when large amounts of fluid (water or oil) are withdrawn from weakly consolidated materials, such as fine-grained sediments. Large-scale subsidence due to fluid withdrawal is not an issue at OTC because the area does not overlie an actively pumped groundwater aquifer or an oil field (Wilson Geosciences Inc., 2011).

Radon

Radon is a radioactive gas produced by the breakdown of naturally occurring radioactive elements (such as uranium, thorium, and radium) in soils and rocks. As part of the radioactive decay process, the gas moves up through the soil to the surface, where it can enter homes, schools, and the workplace through cracks and other holes in the foundation. Radon gas is inert, colorless, and odorless. Radon occurs naturally in the atmosphere in trace amounts and outdoors radon disperses rapidly, but when it gets trapped indoors exposure levels can be high, and in high doses exposure to radon can cause cancer (USEPA, 2019). Radon levels are highest in building basements (areas in proximity to the soil) that are poorly ventilated. San Diego County is located within Radon Zone 3 (USEPA, 2020), which is classified by USEPA as having low potential for the presence of radon. A Draft Environmental Condition of Property of OTC also determined that radon is not an issue of concern at OTC (USEPA, 2020). Based on the findings of USEPA and the Draft Environmental Condition of Property report, and because the structures at OTC would be revitalized or replaced under all but the No Action Alternative, radon levels onsite at OTC are not considered an area of concern and therefore will not be further analyzed in Environmental Consequences below.

3.14.3 Environmental Consequences

The evaluation of the potential significance of impacts from project alternatives to geological resources considers the degree to which the following could potentially occur:

- changes to existing topography that could increase the potential for erosion and landslides
- damage to or removal of important geologic features or unique geologic structures
- loss of potentially developable mineral deposits
- soil disturbance or increased erosion that would result from demolition and/or rehabilitation and construction activities
- loss of agriculturally productive soil
- risk of earthquake-related injury or damage

As discussed in Section 3.14.2, there are no potentially developable mineral resource deposits or agriculturally productive soils at OTC. Therefore, none of the project alternatives would affect these resources and they are not evaluated further. Additionally, there are no paleontological resources at OTC; however, potential impacts to paleontological resources are addressed in Appendix A. OTC is not within the tsunami inundation area mapped by the California Emergency Management Agency. Therefore, none of the project alternatives would be affected by tsunami inundation and impacts associated with tsunamis are not evaluated further.

3.14.3.1 No Action Alternative

Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities, as described in Chapter 2. The Proposed Action Alternatives would not occur and there would be no change to baseline topography, geology, or soils. Therefore, no impacts to topography, geology, or soils would occur with implementation of the No Action Alternative.

Operations at OTC would continue in the existing buildings without significant renovations and the buildings would not be updated with required facility seismic upgrades or replaced with buildings meeting modern seismic safety standards. The Earthquake Engineering Research Institute San Diego Chapter (2020) studied the impacts of a plausible earthquake on the Rose Canyon Fault Zone if it were to strike the San Diego region today. The study predicts that DoD facilities that have not undergone seismic retrofits may suffer extensive damages and loss of utility lifeline services. Older OTC facilities situated on hydraulic fill soils subject to liquefaction are anticipated to experience significant impacts and long recovery times from the scenario earthquake (i.e., 6.9 magnitude) (Earthquake Engineering Research Institute, 2020). Therefore, the No Action Alternative could result in significant impacts from geologic hazards.

3.14.3.2 Alternative 1: NAVWAR-Only Redevelopment

Construction

Topography

Construction activities can change the topography of an area, potentially resulting in slope instability and alteration of surface drainage patterns. Minor earthwork would be required for grading to construct the parking lot and for any foundation updates necessary for the renovation of the two buildings. Grading to construct flat surfaces would result in minimal alteration of existing topography and would occur on previously developed, relatively flat surfaces. Because the site is flat, there would not be an increased potential risk for landslides. Therefore, construction under Alternative 1 would result in less than significant impacts to topography.

Geology

Construction activities can result in damage to or removal of important geologic features or unique geologic structures. Subsurface excavations associated with construction would occur in artificial fill and underlying young (Holocene-age) bay, estuarine, and river sediments. However, these are not considered important geologic features or unique geologic structures. Therefore, construction under Alternative 1 would result in less than significant impacts to geology.

Soils

Construction activities can disturb soils and result in increased erosion. For minor construction-related earthwork that could increase the potential for erosion, appropriate erosion control using BMPs would be implemented in accordance with a project-specific construction stormwater pollution prevention plan and in compliance with coverage under the Construction General Permit. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site. With implementation of BMPs there would be a minimal, temporary risk of on-site soil erosion during construction under Alternative 1. Therefore, construction under Alternative 1 would result in less than significant impacts to soils.

Geologic Hazards

Construction activities can increase risks associated with geologic hazards. Faults directly adjacent to OTC are considered active or potentially active. In particular, the nearby Rose Canyon Fault Zone is known to be an active fault in the area of Old Town, less than a mile from OTC. In addition, the Spanish Bight Fault may connect with northern segments of the Rose Canyon Fault Zone along an alignment that could transect OTC (SANDAG, 2020a). Because of the newly identified Alquist-Priolo Earthquake Fault Zone within the southeast portion of OTC Site 1 and the presence of nearby active and potentially active faults, a Faulting, Seismicity, and Geologic Hazards Investigation would be conducted to determine whether an active fault is located within OTC. If the investigation identifies an active fault within OTC, a Fault Surface Rupture Displacement Hazard Investigation and a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would also need to be conducted (SANDAG, 2020a). The purpose of the first investigation would be to estimate the fault rupture displacements, while the second investigation would describe the hazard mitigation design alternatives. Existing buildings at OTC Site 1 would be renovated under Alternative 1 to meet seismic requirements. However, if an active or potentially active fault is identified within OTC, these renovations would have minimal effect on reducing damage to buildings impacted directly by a fault rupture or displacement. Therefore, construction under Alternative 1 could result in significant impacts from geologic hazards.

Operations

Following construction, there would be no additional disturbance of topography, geology, or soils. The facility stormwater pollution prevention plan and associated BMPs would be updated to minimize erosion of soils in compliance with the Navy's Waste Discharge Requirement permit (see Section 3.15.3.7, *Water Resources*). As described under construction, upgrades to existing buildings to meet seismic requirements would help to minimize potential effects of seismically-induced ground movement. Repair work on existing buildings would meet all applicable building codes and standards.

Superstructure and foundation repairs include adding columns and footings to support additional floors within the existing building envelope and required facility seismic upgrades. These renovations would help to minimize potential effects of seismically-induced ground movement such as severe shaking, lateral spreading, slope failure, or liquefaction. However, renovated buildings would still be at risk if an active or potentially active fault is identified within OTC. Therefore, operations under Alternative 1 could result in significant impacts from geological hazards.

3.14.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Construction

Alternative 2 would require more significant earthwork and grading than Alternative 1. However, there would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Appropriate erosion control using BMPs would be implemented in accordance with a project-specific construction stormwater pollution prevention plan and in compliance with coverage under the Construction General Permit. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site.

A Faulting, Seismicity, and Geologic Hazards Investigation would be conducted during the planning phase as described for Alternative 1. If an active fault is identified during this process, a Fault Surface Rupture Displacement Hazard Investigation and a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would be prepared to further inform the design of the project. A probabilistic fault hazard displacement assessment should also be performed to estimate the magnitude of displacement to be addressed in the design of features crossing the fault (SANDAG, 2020a).

Any new construction under Alternative 2 would adhere to required setbacks from any active fault identified during the geotechnical investigation. The Alquist-Priolo Special Studies Zone Act states that no occupied structure shall be built on a trace of a fault that has a well-defined surface expression and is known to be sufficiently active in the Holocene (i.e., within the last 11,700 years). If potentially active faults are identified (with known movement in the Quaternary period, older than 11,700 years) during the geotechnical investigation, a project geologist would recommend setbacks for the planned locations of structures.

All new structures would be designed and constructed to comply with the seismic design criteria identified in the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. This standard seismic engineering design would be used to minimize potential effects of seismically-induced ground movement such as severe shaking, lateral spreading, slope failure, or liquefaction (see GEO MGMT 3 in Section 3.14.7). Therefore, with the implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction under Alternative 2 would result less than significant impacts to geological resources.

Operations

Following construction, there would be no additional disturbance of topography, geology, or soils. Erosion of soils would be managed in compliance with the Navy Waste Discharge Requirement permit as described for Alternative 1. As described under construction, the location of facilities, project design, and construction would be based on engineering recommendations to be in compliance with the seismic design criteria to meet all applicable building codes and standards. Therefore, operations under Alternative 2 would result in less than significant impacts to geological resources.

3.14.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Construction

Under Alternative 3, revitalization activities are similar to those described under Alternative 2, but the development envelope for private development would be reduced. Alternative 3 would result in similar amounts of earthwork and grading, there would be minimal alteration of existing topography, and construction would occur on previously developed surfaces. Appropriate erosion control using BMPs would be implemented in accordance with a project-specific construction stormwater pollution prevention plan and in compliance with coverage under the Construction General Permit. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site.

A Faulting, Seismicity, and Geologic Hazards Investigation would be conducted during the planning phase as described for Alternative 1. If an active fault is identified during this process, a Fault Surface Rupture Displacement Hazard Investigation and a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would be prepared to further inform the design of the project. Any new construction would adhere to required setbacks from any active fault identified during the geotechnical investigation. Site-specific seismic engineering and design standards would be implemented to minimize impacts from anticipated seismic activity, and subsequent effects such as liquefaction at OTC (see GEO MGMT 3 in Section 3.14.7). Therefore, with the implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, implementation of Alternative 3 would result less than significant impacts to geological resources.

Operations

Following construction, there would be no additional disturbance of topography, geology, or soils. Erosion of soils would be managed in compliance with the Navy Waste Discharge Requirement permit as described for Alternative 1. As described under construction, the location of facilities, project design, and construction would be based on engineering recommendations to be in compliance with the seismic design criteria to meet all applicable building codes and standards. Therefore, operations under Alternative 3 would result in less than significant impacts to geological resources.

3.14.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

Construction

Under Alternative 4, revitalization activities are similar to those described under Alternative 2, but a portion of OTC would be developed as a transit center. Alternative 4 would result in similar amounts of earthwork and grading as described under Alternative 2. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Appropriate erosion control using BMPs would be implemented in accordance with a project-specific construction stormwater pollution prevention plan and in compliance with coverage under the Construction General Permit. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site.

A Faulting, Seismicity, and Geologic Hazards Investigation would be conducted during the planning phase as described for Alternative 1. If an active fault is identified during this process, a Fault Surface Rupture Displacement Hazard Investigation and a Geotechnical, Geologic, and Seismic Hazards Impacts

Investigation would be prepared to further inform the design of the project. Any new construction would adhere to required setbacks from any active fault identified during the geotechnical investigation. Site-specific seismic engineering and design standards would be implemented to minimize impacts from anticipated seismic activity, and subsequent effects such as liquefaction at OTC (see GEO MGMT 3 in Section 3.14.7). Therefore, with the implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, implementation of Alternative 4 would result less than significant impacts to geological resources.

Operations

Following construction, there would be no additional disturbance of topography, geology, or soils. Erosion of soils would be managed in compliance with the Navy Waste Discharge Requirement permit as described for Alternative 1. As described under construction, the location of facilities, project design, and construction would be based on engineering recommendations to be in compliance with the seismic design criteria to meet all applicable building codes and standards. Therefore, operations under Alternative 4 would result in less than significant impacts to geological resources.

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

Construction

Under Alternative 5, revitalization activities would be similar to those described under Alternative 3, but a portion of OTC would be developed as a transit center and the development envelope for private development would be slightly reduced. Alternative 5 would result in similar amounts of earthwork and grading as described under Alternative 2. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Appropriate erosion control using BMPs would be implemented in accordance with a project-specific construction stormwater pollution prevention plan and in compliance with coverage under the Construction General Permit. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site.

A Faulting, Seismicity, and Geologic Hazards Investigation would be conducted during the planning phase as described for Alternative 1. If an active fault is identified during this process, a Fault Surface Rupture Displacement Hazard Investigation and a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would be prepared to further inform the design of the project. Any new construction would adhere to required setbacks from any active fault identified during the geotechnical investigation. Site-specific seismic engineering and design standards would be implemented to minimize impacts from anticipated seismic activity, and subsequent effects such as liquefaction at OTC (see GEO MGMT 3 in Section 3.14.7). Therefore, with the implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, implementation of Alternative 5 would result in less than significant impacts to geological resources.

Operations

Following construction, there would be no additional disturbance of topography, geology, or soils. Erosion of soils would be managed in compliance with the Navy Waste Discharge Requirement permit as described for Alternative 1. As described under construction, the location of facilities, project design, and construction would be based on engineering recommendations to be in compliance with the seismic design criteria to meet all applicable building codes and standards. Therefore, operations under Alternative 4 would result in less than significant impacts to geological resources.

3.14.3.7 Summary of Proposed Management Practices, Potential Monitoring, and Potential Mitigation

No monitoring measures (other than those included in GEO MGMT-2, described below, related to maintaining erosion and sedimentation controls) or mitigation measures would be warranted for geological resources based on the analysis presented in Section 3.14.3.

Proposed Management Practices

- GEO MGMT-1. Standard engineering measures would be implemented and in compliance with the Construction General Permit, including implementation of a project-specific stormwater pollution prevention plan with associated BMPs to minimize erosion and stabilize soils.
- GEO MGMT-2. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site.
- GEO MGMT-3. A subsurface geotechnical investigation and fault hazard investigation would be conducted to determine soil properties in addition to the seismic and liquefaction hazards for the project site. All new structures would be designed and constructed to comply with the seismic design criteria identified in the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. If needed, measures identified in the geotechnical investigation would be implemented to minimize impacts associated with specific hazards (SANDAG, 2014a). These may include but are not limited to the following:
    - *Rupture of a known earthquake fault*: any new construction would adhere to required setbacks from any active fault identified during the geotechnical investigation.
    - *Liquefaction*: (1) in-situ ground improvement methods (e.g., densification or solidification), (2) transferring of load to underlying bearing layers that are non-liquefiable, or (3) excavation of susceptible soils and replacement with compacted engineered fill.
    - *Lateral spread*: (1) in-situ ground improvement methods (e.g., densification or solidification), (2) designing the foundation to resist horizontal permanent ground displacement, or (3) subsurface barrier walls.
    - *Compressible soils*: (1) in-situ densification of compressible soils, (2) transferring of load to underlying non-compressible layers (i.e., through the use of pile or drilled shaft foundations), and (3) surcharging or excavation of compressible soils and replacement with compacted engineered fill.
    - *Expansive soils*: (1) drainage-control devices to limit water infiltration near foundation, (2) excavation of expansive soils and replacement with compacted engineered fill, and (3) support of the new structures on piles that are designed to resist impacts of expansive soils.

3.14.3.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be no significant impacts to geological resources from implementation of Alternative 2, Alternative 3, Alternative 4, and Alternative 5 but there could be significant impacts from geologic hazards with implementation of the No Action Alternative or Alternative 1. The management measures described in Section 3.14.3.7 would be implemented under Alternative 1, Alternative 2, Alternative 3, Alternative 4, or Alternative 5 to further minimize or avoid potential impacts.

3.15 Water Resources

Water resources include groundwater, surface water, and floodplains. The ROI for water resources consists of OTC, as well as the lower portion of the San Diego River and a portion of San Diego Bay, referred to as the Naval Training Center Boat Channel that represent receiving waters for stormwater runoff discharges from OTC Sites 1 and 2, respectively. The Proposed Action Alternatives are not located within the coastal zone, which is defined in California Coastal Act section 30103 as the area extending seaward from the shoreline to the State of California's outer limit of jurisdiction (3 nautical miles), including all offshore islands, and extending inland 1,000 yards from the mean high tide line. Although the Proposed Action Alternatives are not located within the coastal zone, they have the potential to affect the coastal zone through stormwater runoff to drainages that discharge to the San Diego River and to San Diego Bay (Figure 3.15-1). Consequently, this section also addresses stormwater runoff in the context of surface waters. This section does not address wetlands because these features do not occur within the ROI.

Groundwater is water that flows or seeps downward and saturates soil or rock, supplying springs and wells. Groundwater is used for water consumption, agricultural irrigation, and industrial applications. Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition. Designation as a sole source aquifer provides limited protection of groundwater resources that serve as drinking water supplies.

Surface water resources generally consist of wetlands, lakes, rivers, and streams, as well as bays and oceans, such as San Diego Bay and the Pacific Ocean, respectively. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. At OTC, surface water consists solely of stormwater that runs off pavement and other impervious surfaces following rainfall events. A total maximum daily load is the maximum amount of a substance that can be assimilated by a water body without causing impairment. A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards occur.

Floodplains are areas of low-level ground along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplain boundaries are typically defined in terms of frequency of inundation (e.g., a 100-year or 500-year flood event). Floodplain delineation maps are produced by the Federal Emergency Management Agency (FEMA) and provide a basis for comparing the locale of the Proposed Action Alternatives to the floodplains. All military properties are exempt from FEMA regulations and, as a result, FEMA has not designated flood zones within OTC.

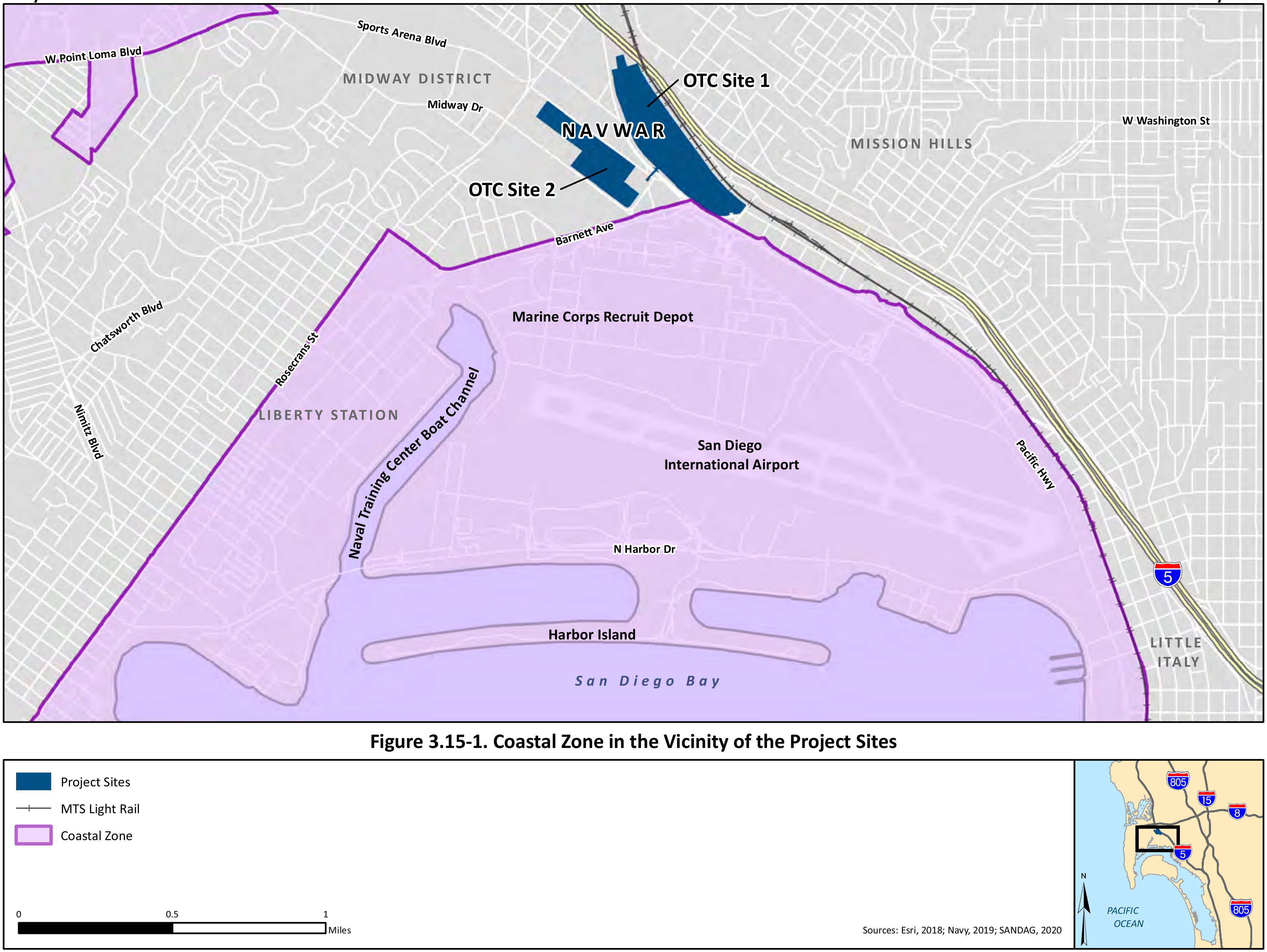


Figure 3.15-1. Coastal Zone in the Vicinity of the Project Sites

3.15.1 Regulatory Setting

Laws and regulations applicable to water resources include the following, as detailed in Chapter 1:

- Clean Water Act of 1972 (including sections 303(d), 319, 401, 402, 403, 404)
- Coastal Zone Management Act
- Energy Independence and Security Act section 438
- Sikes Act
- EO 11988 (Floodplain Management)
- Other Federal Low Impact Development Guidance
- Federal Antidegradation Policy
- Porter-Cologne Water Quality Control Act
- California Water Code (including article 4, chapter 4, division 7 commencing with section 13260 and chapter 5.5, division 7 commencing with section 13370)
- San Diego County Code of Regulatory Ordinances Relating to Watershed Protection (section 67.801 et seq.)

3.15.2 Affected Environment

The following provides a description of the existing conditions for water resources in the ROI.

3.15.2.1 Groundwater

Description

Groundwater in the vicinity of OTC is associated with the Lindbergh Subarea (Basin 908.21) of the San Diego Mesa Hydrologic Area (908.20) in the Pueblo San Diego Unit (908.00) (Navy, 2019b). Groundwater in the area exists in an unconfined condition at depths ranging from approximately 7 to 18 feet below ground surface, and at or slightly above mean sea level (Navy, 2019b). Site investigations at OTC have encountered groundwater at depths of 7 to 15 feet below ground surface (Navy, 2020a, 2019c). Groundwater elevations at OTC are minimally affected (i.e., approximately 0.02 feet) by tidal influences (Navy, 2020a) or seasonal fluctuations (Navy, 2019c). Because 95 percent of the project area is covered with impermeable surfaces (Navy, 2020a; Regional Water Quality Control Board, 2014), contributions to groundwater recharge from infiltration of surface runoff are negligible. Groundwater flows in the vicinity of OTC generally vary from south-southeast to north-northwest directions. Gradients from less than 0.001 feet per foot (vertical to horizontal distance) to 0.0025 feet per foot have been measured at OTC (Navy, 2019c).

Groundwater beneath OTC is brackish with high chloride and sulfate concentrations due to its proximity to San Diego Bay and the site history as a filled, intra-tidal, river estuary (Navy, 2020a; Navy, 2019c). Groundwater quality within portions of OTC also has been affected historically by spills and releases of chemical contaminants. Remediation of a groundwater plume of chlorinated VOCs (primarily trichloroethene, cis-1,2-dichloroethene, and vinyl chloride) is currently in progress (see Section 3.7, *Hazardous Materials and Wastes*). Groundwater is not a source of potable water at OTC, and there are no known drinking water wells within a 1-mile radius of OTC (Navy, 2020a).

Beneficial Uses

The Water Quality Control Plan for the San Diego Basin (hereinafter referred to as the Basin Plan), adopted by the Regional Water Quality Control Board for the San Diego Region, establishes water quality objectives and implementation plans to protect the beneficial uses of water bodies in the San Diego region. The Basin Plan defines beneficial uses as the uses of water necessary for the survival or well-being of man, plants, and wildlife (Regional Water Quality Control Board, 2016). The San Diego Mesa Hydrologic Area that includes OTC has no designated beneficial uses. The Regional Water Quality Control Board considers the San Diego Mesa Hydrologic Area exempt from municipal use designation under State Board Resolution 88-63 (Sources of Drinking Water Policy). Exemptions can apply in situations where total dissolved solids concentrations in surface or groundwater exceed 3,000 milligrams per liter and where contamination cannot reasonably be treated for domestic use with either BMPs or best available technology economically achievable practices (Regional Water Quality Control Board, 2016). Consequently, there are no beneficial uses or water quality objectives for groundwater specified in the Basin Plan for this hydrologic area (Navy, 2020a).

3.15.2.2 Surface Water and Stormwater Runoff

Description

OTC is within the Pueblo San Diego Hydrologic Unit (Regional Water Quality Control Board, 2014), which is one of the three sub-watersheds comprising the 442 square mile San Diego Bay Watershed that drains into San Diego Bay. The Pueblo San Diego Hydrologic Unit is a triangular-shaped sub-watershed that encompasses the northern portion of the Bay, including OTC. The Pueblo San Diego Hydrologic Unit has the smallest drainage area (about 60 square miles) but is the most densely developed and populated because it includes the City of San Diego. This sub-watershed contains no major stream systems (Regional Water Quality Control Board, 2016).

No surface water features, such as creeks or streams, exist within OTC. The property currently is almost entirely covered by buildings and pavement, with minimal landscaping or vegetative cover. A 2.2-acre portion of the property associated with the previously removed rail spur is unpaved, with bare soil partially covered with a thin layer of ballast (Navy, 2020a). The closest surface waters are associated with the San Diego River approximately 0.5 miles north of OTC and a channel—referred to as the Naval Training Center Boat Channel—that is an extension of San Diego Bay and terminates approximately 0.75 miles south of OTC. Properties adjacent to OTC are fully developed, primarily with commercial and industrial businesses (Navy, 2020a).

The only surface waters at OTC are associated with periodic rainfall (stormwater) runoff. The average annual rainfall is approximately 10 inches, which occurs mostly between November and March. The 95th percentile design storm event (i.e., 24-hour rainfall depth) for the adjacent San Diego International Airport is 1.28 inches (DoD, 2020). OTC is relatively flat, ranging in elevation from approximately 9 to 13 feet above mean sea level. Runoff at the site is directed via site grading to the storm drain system and conveyed via the City of San Diego's storm drainage system to outfalls that discharge stormwater runoff without treatment from OTC Site 1 to the San Diego River and from OTC Site 2 to the northern end of the Naval Training Center Boat Channel portion of San Diego Bay.

Point source discharges from OTC consist of municipal stormwater runoff (Regional Water Quality Control Board, 2014, 2017). Stormwater runoff discharges from OTC are regulated by Regional Water Quality Control Board Order No. R9-2014-0037, as Amended by Order No. R9-2017-0010, National

Pollutant Discharge Elimination System Permit No. CA0109363–Waste Discharge Requirements for United States Department of the Navy, Naval Base Point Complex San Diego County (hereinafter referred to as the Waste Discharge Requirement permit). The Waste Discharge Requirement permit addresses the requirements of the California General Permit for stormwater runoff discharges associated with industrial storm activities, the Small Municipal Separate Storm Sewer System permit requirements, and individual industrial wastewater discharges.

Per the Waste Discharge Requirement permit (Section IV.B), operations at all Naval Base Point Loma facilities must be evaluated and classified according to the following risk level designations:

- Small Municipal (Military Base) Separate Storm Sewer System Areas
- Industrial No Exposure Areas
- Industrial Low-Risk Areas
- Industrial High-Risk Areas

OTC stormwater outfalls covered by the Waste Discharge Requirement permit, along with the associated risk level designations and receiving water bodies, are listed in Table 3.15-1.

Table 3.15-1 Summary of Stormwater Outfalls and Risk Level Designations at OTC

Discharge Point	*Navy ID No.*	*Type*	*Outfall Risk Level**	*Receiving Water*
NBPL-154	Old Town-1	Municipal	Nonindustrial	City of San Diego; San Diego River
NBPL-155	Old Town-2	Municipal	Nonindustrial	City of San Diego; San Diego River
NBPL-156	Old Town-3	Municipal	Nonindustrial	City of San Diego; San Diego River
NBPL-157	Old Town-4	Municipal	Nonindustrial	City of San Diego; San Diego River
NBPL-158	Old Town-5	Municipal	Nonindustrial	City of San Diego; San Diego Bay

Legend: NBPL = Naval Base Point Loma.
Notes: *Municipal Nonindustrial (Small Municipal Separate Storm Sewer System) Areas. Areas where no industrial activities occur.
Source: Regional Water Quality Control Board, 2014 (Attachment M, with updates from Navy, 2020f).

During the 2019-2020 compliance year, Naval Base Point Loma re-evaluated industrial activities at OTC and reduced the number of industrial facilities from those listed in the Waste Discharge Requirement permit (Regional Water Quality Control Board, 2014, 2017) based on interpretations of the Standard Industrial Classification Code that requires industrial stormwater coverage. Based on that assessment (Navy, 2020f), as of January 20210, none of the OTC facilities are classified as industrial; all OTC outfalls are considered municipal/nonindustrial and were moved to the Municipal Separate Storm Sewer System program as of February 2020. OTC has no high-risk industrial activity areas (Navy, 2020f).

National Pollutant Discharge Elimination System permits for stormwater runoff discharges require control of pollutant discharges using best available technology and best conventional pollutant control technology to prevent and reduce pollutants and any more stringent controls necessary to meet water quality standards. Stormwater runoff within the Municipal Separate Storm Sewer System portions of OTC is managed using the minimum control measures listed in Attachment L of the Waste Discharge Requirement permit (Regional Water Quality Control Board, 2014). The Waste Discharge Requirement permit for OTC (Regional Water Quality Control Board, 2014, 2017) also requires the discharger to prepare a stormwater pollution prevention plan and a stormwater management plan. The stormwater pollution prevention plan includes a narrative description of Naval Base Point Loma's industrial facilities, associated potential pollutant sources, and potential stormwater pollutants (Navy, 2020e).

Previously, when Outfall Old Town-1 was considered an industrial discharge, it was inspected quarterly and sampled and observed twice per 6-month period depending on storms. Currently, the municipal/nonindustrial outfalls are inspected quarterly, and facility inspections are risk-based, such that if an outfall is observed to have a discharge then follow-up investigation of the drainage area would occur, including inspections of Municipal Separate Storm Sewer System buildings in the drainage area. OTC facilities are also evaluated annually for water quality risks as part of annual reporting requirements. For the 2019-2020 stormwater monitoring period (Navy, 2020f; corresponding to the most recent annual stormwater monitoring report available for Naval Base Point Loma), the Navy detected no non-compliance events, unauthorized non-stormwater discharges, or spills or illicit discharge events at OTC. Further, the Navy determined as part of the annual comprehensive site compliance evaluation for OTC that all applicable stormwater BMPs have been fully implemented (Navy, 2020f).The Navy is also actively evaluating treatment options and strategies for further reducing base-wide potential pollutant loadings and stormwater discharges. One of these strategies is implementing a low impact development policy that includes a goal of no net increase in stormwater volume and sediment or in nutrient loading from major renovation or construction projects. (Navy, 2020f).

Beneficial Uses

Existing and potential beneficial uses of surface waters within the Lindbergh Subarea (Hydrologic Basin Unit Number 8.21), which contains the Pueblo San Diego Hydrologic Unit, include (Regional Water Quality Control Board, 2016):

- REC1: *Contact Water Recreation*–uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible
- REC2: *Non-contact Water Recreation*–uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible
- WARM: *Warm Freshwater Habitat*–uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates
- WILD: *Wildlife Habitat*–uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife or wildlife water and food sources

Surface waters within this basin are exempt from MUN (*Municipal and Domestic Supply*–uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply) beneficial uses (Regional Water Quality Control Board, 2016).

Surface waters within the lower portion of the San Diego River (Hydrologic Unit Basin Number 7.11), which are the receiving waters for stormwater discharges from OTC Site 1, support beneficial uses of AGR (*Agricultural Supply* – uses of water for farming, horticulture, or ranching), IND (*Industrial Service Supply* – uses of water for industrial activities that do not depend primarily on water quality), REC1, REC2, BIOL (*Preservation of Biological Habitats of Special Significance* – uses of water that support designated areas or habitats), WARM, WILD, and RARE (*Rare, Threatened, or Endangered Species* – uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.) (Regional Water Quality Control Board, 2016). Waters in the lower portion of the San Diego River are exempt from MUN beneficial uses. The lower portion of the San Diego River is also designated as water quality limited for indicator bacteria, as well as other contaminants, and included in an adopted and approved total daily maximum load (Regional Water Quality Control Board, 2016). Surface waters within the Naval Training Center Boat Channel, which are the receiving waters for stormwater discharges from OTC Site 2, support beneficial uses of EST (*Estuarine Habitat*–uses of water that support estuarine ecosystems) and MAR (Marine Habitat–uses of water that support marine ecosystems). The Boat Channel also provides habitat for eelgrass, which is considered a sensitive habitat (Navy, 2016).

Impaired Waters/303(d)

There are no impaired surface water bodies within or immediately adjacent to OTC. However, the San Diego River, which is the receiving water for OTC Site 1 stormwater runoff discharges, is impaired due to indicator bacteria and included in an adopted and approved total daily maximum load (Regional Water Quality Control Board, 2016).The lower portion of the San Diego River is also impaired due to dissolved oxygen, total dissolved solids, nutrients (nitrogen and phosphorus), cadmium, toxicity, and benthic community effects. Potential sources of these contaminants include urban runoff and other unknown point and nonpoint sources. San Diego Bay, which is the receiving water for OTC Site 2 stormwater runoff discharges, is impaired due to PCBs, mercury, and polycyclic aromatic hydrocarbons Portions of San Diego Bay that are adjacent to the Boat Channel, including Harbor Island West Basin, are impaired due to elevated copper concentrations. Potential sources of these contaminants are listed as unknown, but could include legacy sources, such as illegal dumping, accidental releases/spills, unspecified urban stormwater, and urban runoff/storm sewers. Several areas along the northern San Diego Bay shoreline (America's Cup Harbor, Shelter Island Marina) are impaired due to elevated concentrations of dissolved copper and are on the current (2016) 303(d) list of impaired water bodies. A total maximum daily load has been implemented to address dissolved copper impairments at Shelter Island (Regional Water Quality Control Board, 2005). The Regional Water Quality Control Board concluded that copper leaching from anti-fouling paints used on recreational boats in the marinas was the primary source of dissolved copper and that contributions from urban runoff were negligible (Regional Water Quality Control Board, 2005).

Sediments within the Naval Training Center Boat Channel contained elevated concentrations of metals (copper, zinc, and lead) and chlorinated pesticides (dichlorodiphenyltrichloroethane and chlordane) that originated from stormwater discharges from adjacent properties (Regional Water Quality Control Board, 2018). A removal action was conducted by the Navy at the Boat Channel from September 2017 through March 2018, and a final Removal Action Completion Report was submitted in March 2019 (Navy, 2019e). The cleanup status of the Boat Channel site has been closed as of April 16, 2019 (State Water Resources Control Board, 2020).

3.15.2.3 Floodplains

Floodplains are defined as lowland and relatively flat areas adjoining inland and coastal waters that are subject to a one percent or greater chance of flooding in any given year (i.e., 100-year recurrence). All military properties are exempt from FEMA regulations and, as a result, FEMA has not designated flood zones within OTC. Properties immediately adjacent to OTC are mapped by the FEMA Flood Insurance Rate Map (06073C1877H) as areas with minimal flood hazard (Zone X). The closest 100-year and 500-year floodplains are located north and south of OTC and are associated with the San Diego River and San

Diego Bay, respectively. The 100-year floodplain includes portions of the San Diego River but does not extend to OTC. OTC is also not within a tsunami inundation zone.

3.15.3 Environmental Consequences

This section focuses on proposed activities that could have environmental consequences for water resources. An alternative would result in significant impacts on water resources if it would do any of the following:

- *Impervious surfaces:* result in a substantial increase in impervious surfaces and associated increased stormwater runoff.
- *Alteration to drainage patterns:* result in a substantial alteration of drainage patterns due to changes in stormwater runoff flow rates or volumes (e.g., result in substantial flooding or ponding of surface runoff).
- *Surface water quality:* substantially degrade the quality of surface or receiving waters.
- *Water quality standards:* violate federal, state, or local water quality standards or Waste Discharge Requirements.
- *New stormwater runoff drainage facilities or expansion of existing facilities:* require or result in the construction of new stormwater runoff drainage facilities or the expansion of existing facilities, the construction of which could result in significant environmental effects.

3.15.3.1 No Action Alternative

Impact Analysis

Under the No Action Alternative, the Proposed Action Alternatives would not occur, and this alternative would not result in any changes to existing facilities and land uses at OTC. Because the No Action Alternative would not require demolition, construction, or renovation activities, other than those required for periodic minor repairs and maintenance, no construction-related impacts to water resources would occur. Further, no impacts to water resources associated with ongoing NAVWAR operations at OTC would occur under the No Action Alternative because there would be no changes to existing operations and land uses at OTC. The following expands on this analysis relative to each of the five evaluation factors identified above.

Impervious Surfaces

Under the No Action Alternative, no new impervious surfaces would be created; therefore, no impacts to water resources associated with increased stormwater runoff volumes would occur.

Alteration to Drainage Patterns

Under the No Action Alternative, existing drainage patterns/flows would not be altered, and there would be no change to existing risks related to flooding or ponding on- or off-site; therefore, the No Action Alternative would have no impact to water resources associated with alteration to drainage patterns.

Surface Water Quality

No surface water features such as creeks and streams currently exist within or immediately adjacent to OTC. Stormwater runoff discharges from OTC would continue to be regulated under the existing Waste Discharge Requirement permit. Under the No Action Alternative, the quality of stormwater runoff discharges and receiving waters would remain the same. Since there have not been any recent notices of violation or non-compliance with the existing Waste Discharge Requirement permit (Navy, 2020f), the current operations are not considered a source of contaminant loadings and do not have an adverse effect on the quality of receiving waters (Regional Water Quality Control Board, 2014). Therefore, the No Action Alternative would have no impact on surface water quality.

Water Quality Standards

Stormwater runoff discharges are the only waste streams from OTC that are subject to water quality standards. Under the No Action Alternative, OTC would continue to operate in accordance with the existing stormwater pollution prevention plan and stormwater management plan required by the Naval Base Point Loma Waste Discharge Requirement permit. There have not been any recent notices of violation or non-compliance with the existing Waste Discharge Requirement permit (Navy, 2020f). Thus, the No Action Alternative would result in no impacts to water resources relative to violations of water quality standards.

New Stormwater Drainage Facilities or Expansion of Existing Facilities

Under the No Action Alternative, none of the proposed construction or redevelopment activities would occur. Facilities, activities, land use, and stormwater runoff controls would continue as is and would not require construction of new facilities or expansion of existing facilities. Therefore, no impact to water resources would occur under the No Action Alternative with regard to new or expanded stormwater drainage facilities.

Impact Conclusion

For the reasons discussed above, no impacts to water resources would occur under the No Action Alternative.

3.15.3.2 Alternative 1: NAVWAR-Only Redevelopment

Impact Analysis

Impervious Surfaces

<u>Construction</u>

Activities associated with demolition, construction, and renovation of NAVWAR facilities could involve temporary removal of impervious surfaces. This would not substantially affect rates of infiltration of surface water to groundwater because the portion of the site exposed would be relatively small and the period of exposure would be temporary. Therefore, impacts to water resources associated with potential changes to stormwater runoff volumes during construction would be less than significant.

<u>Operations</u>

Alternative 1 operation would not result in impacts associated with impervious surfaces because once constructed, the portion of OTC covered with an impervious surface is expected to be similar to or less than existing conditions. Therefore, operations would not result in increased stormwater runoff volumes.

In accordance with the Navy's established or adopted building standards (Navy, 2007), new and redeveloped military facilities must incorporate sustainable designs. Details regarding the nature and extent of any sustainable design changes to the existing stormwater system associated with Alternative

1 are not currently available. However, the Navy's requirements for the Proposed Action Alternatives (Navy, 2020b) identifies several UFCs that would apply to Alternative 1, including Low Impact Development (UFC 3-210-10; DoD 2020), Civil Engineering (UFC 3-201-01; DoD 2012), and Pavement Design for Roads and Parking Areas (UFC 3-250-01; DoD, 2016b). The criteria and design standards in UFC 3-210-10 (Low Impact Development) are required for the planning, design, and construction of all permanent DoD projects in the U.S. that meet both of the following conditions:

1) The project includes construction or expansion of one or more buildings as part of its primary scope (i.e., primary facilities versus supporting facilities).
2) The "footprint" is greater than 5,000 gross square feet. "Footprint" consists of all new impervious surfaces associated with the building(s), including both building area and pavement area of associated supporting facilities (such as parking and sidewalks). "Footprint" does not include the existing building area to be renovated, existing pavement area to be resurfaced, or new pavement area other than supporting facilities associated with the building(s).

Low impact development features can fall into the following general categories (DoD, 2020):

1) Engineered Natural Treatment: features that provide depression storage, infiltration, and evapotranspiration, such as bioretention, vegetated swales, rain gardens, and vegetated filter strips.
2) Engineered Subsurface Treatment: features may include permeable pavements and infiltration trenches that provide infiltration and prevent concentrated flow.
3) Non-potable Rainwater Harvesting Systems: features that may include low impact development features like cisterns and rain barrels to store rainwater for non-potable uses, such as irrigation.
4) Green (Vegetative) Roofs: these features do not promote infiltration of water into the ground at the source.

As noted above, details regarding the type(s) of sustainable design changes to the existing stormwater runoff infrastructure associated with Alternative 1 are not currently available, but could fall into one or more of these categories, with the exception that vegetative roofs would be impractical and are not considered further.

The Navy's requirements (Navy, 2020b), UFC 3-201-01 (Civil Engineering) and UFC 3-250-01 (Pavement Design for Roads and Parking Areas) could provide additional design requirements for surface and subsurface drainage and stormwater runoff management systems that could potentially increase the existing permeability at OTC. Although the specific requirements needed to comply with the relevant UFC and other Navy building standards have not been specified, Alternative 1 would not result in a substantial increase in impervious surfaces or associated increases in stormwater runoff volumes. Therefore, impacts to water resources associated with increased stormwater runoff volumes during Alternative 1 operations would be less than significant.

Alteration to Drainage Patterns

<u>Construction</u>

Federal statutes and regulations require discharges to surface waters of stormwater runoff associated with construction activity, including demolition, clearing, grading, and excavation, and other land disturbance activities to obtain coverage under a National Pollutant Discharge Elimination System permit. The permit requires implementation of best available technology and best conventional pollutant control technology to reduce or eliminate pollutants in stormwater runoff, as well as additional requirements necessary to implement applicable water quality standards.

Construction of Alternative 1 would be conducted under the current state permit (Construction General Permit; General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities; State Water Resources Control Board Order No 2009-0009-DWQ amended 2010-0014-DWQ and by 2012-0006-DWQ, National Pollutant Discharge Elimination System Permit No. CAS000002) (State Water Resources Control Board, 2009), which includes measures for managing stormwater runoff at construction sites that disturb one or more acres. The permit would require the Navy to prepare a stormwater pollution prevention plan that specifies BMPs for erosion, soil controls, and requirements for inspecting and monitoring BMPs. Implementation of BMPs would avoid the potential for construction activities at OTC to result in changes in drainage patterns that could adversely affect risks of flooding. Therefore, impacts to water resources associated with altered drainage patterns during construction of Alternative 1 would be less than significant.

<u>Operations</u>

The potential for Alternative 1 to substantially alter site topography post-construction is discussed in Section 3.14, *Geological Resources*. Based on that assessment, the post-construction topography would be similar to existing conditions, with post-construction site grading designed to direct stormwater runoff to storm drains. Consequently, during NAVWAR operations under Alternative 1, runoff would be properly conveyed without substantial risk of on-site flooding or redirecting flows that would potentially harm life or property either on- or off-site.

Therefore, Alternative 1 operations would not substantially alter runoff drainage patterns that could increase risks of flooding or surface water ponding, either on- or off-site, and impacts would be less than significant.

Surface Water Quality

<u>Construction</u>

No surface water features, such as creeks or streams, exist within OTC. Therefore, construction of Alternative 1 would not affect water quality for on-site surface water features.

Construction of Alternative 1 would be conducted under the Construction General Permit that includes measures for managing stormwater runoff at construction sites that disturb one or more acres. The permit would require the Navy to prepare a stormwater pollution prevention plan that specifies BMPs for erosion, soil controls, and requirements for inspecting and monitoring BMPs. Per the Construction General Permit (State Water Resources Control Board, 2009), discharges in compliance with the permit would not violate water quality standards. Therefore, impacts to water resources associated with degradation of stormwater runoff during construction of Alternative 1 would be less than significant.

<u>Operations</u>

No surface water features exist within OTC. Therefore, Alternative 1 operations would not affect water quality for on-site surface water features. Alternative 1 operations would not substantially change the character or amount of industrial pollutants generated on-site that could be exposed to stormwater runoff. Instead, the primary source of potential pollutants likely would be vehicle use that could contribute pollutants such as copper, zinc, and/or polycyclic aromatic hydrocarbons associated with brake dust and/or motor oil deposits. Given that Alternative 1 would have fewer parking stalls than the current facilities, pollutant loadings from vehicles likely would be less than or similar to current loadings. Additionally, as noted above, Alternative 1 would incorporate low impact design features. Although details regarding the low impact design features are not currently available, this analysis assumes that low impact design would reduce pollutant loadings due to improved stormwater facilities design and pollutant retention efficiencies (Katz et al., 2018).

Stormwater runoff discharges from OTC would be regulated under the existing Waste Discharge Requirement permit, which would be modified as appropriate to reflect post-construction changes to the stormwater runoff facilities and characteristics of the runoff. Post-construction activities would be required to adhere to the OTC stormwater pollution prevention plan, which includes impact avoidance and minimization measures. By successfully complying with these measures, stormwater runoff during operations would be minimized and treated through low impact development design, site design, and/or structural BMPs mandated by these measures. There have not been any recent notices of violation or non-compliance with the existing Waste Discharge Requirement permit (Navy 2019d). Thus, OTC operations are not considered a source of contaminant loadings and do not have an adverse effect on the quality or receiving waters.

Therefore, impacts to stormwater quality due to Alternative 1 operations would be less than significant.

Water Quality Standards

<u>Construction</u>

In general, construction activities associated with Alternative 1 would not generate point source waste streams other than stormwater runoff discharges. However, it is possible that Alternative 1 construction activities could require groundwater dewatering, which would generate a need for discharging the dewatering effluent. The need for, and potential volumes and water quality characteristics of, a dewatering effluent are currently unknown. If needed, the Navy would obtain a dewatering permit, and dewatering effluent would be disposed of in accordance with Regional Water Quality Control Board Order R9-2014-0041- Waiver Number 3 (Low Threat Discharge to Land for Short Term Construction Dewatering). Alternatively, the need for dewatering could be reduced or eliminated by employing groundwater control measures, such as sheeting or barrier walls to prevent groundwater inflow into excavations.

As discussed in Section 3.7*, Hazardous Materials and Wastes*, the Navy is in the process of designating areas requiring land use controls and identifying which land use controls may be appropriate for existing IR sites at OTC. Navy development activities on the southern portion of OTC Site 1 would need to be coordinated with the Regional Water Quality Control Board and the Department of Toxic Substances Control to ensure that these would be compatible with subsurface conditions in this area. Construction workers would be notified, as required, regarding the potential presence of historical soil/groundwater contamination. Additionally, development would be halted upon discovery of any vapors, discoloration, or other evidence of soil/groundwater contamination during construction and the Navy would be notified.

The Construction General Permit considers excess sediment to be the primary stormwater pollutant at construction sites (State Water Resources Control Board, 2009). Stormwater-induced erosion of excess sediment from a construction site can affect receiving waters by increasing turbidity, smothering aquatic habitat, and spawning areas, and promoting siltation that impedes navigation. Sediment erosion also transports other pollutants such as nutrients, metals, and oils and greases, which can result in a significant degradation of the beneficial uses established for water bodies in California.

The Construction General Permit requires dischargers to ensure that stormwater runoff discharges do not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards contained in a Statewide Water Quality Control Plan, the California Toxics Rule, the National Toxics Rule, or the applicable Regional Water Board's Water Quality Control Plan (i.e., the Basin Plan). The Construction General Permit also requires that dischargers located within the watershed of a 303(d) impaired water body, for which a total maximum daily load has been approved by the USEPA, comply with the approved total maximum daily load if it identifies "construction activity" or land disturbance as a source of the pollution. As noted, San Diego River, which is on the current 303(d) list, is listed as impaired due to indicator bacteria. However, construction activity was not identified as a contributing source to the impairment (Regional Water Quality Control Board, 2016). Therefore, the construction of Alternative 1 would not contribute to impairments to the San Diego River. Similarly, Shelter Island Marina, which is on the current 303(d) list and located in the same watershed as OTC, is listed as impaired due to elevated dissolved copper concentrations. However, construction activity was not identified as a contributing source to the impairment (Regional Water Quality Control Board, 2005). Therefore, the construction of Alternative 1 would not contribute to impairments at the Shelter Island Marina.

Construction of Alternative 1 would comply with the Construction General Permit and stormwater runoff discharges would be required to meet limits specified in the permit. The Construction General Permit sets a numeric action limit for pH of 6.5 to 8.5, and a turbidity numeric action level of 250 nephelometric turbidity units. The purpose of the numeric action level and its associated monitoring requirement is to provide operational information regarding the performance of the measures used at the site to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from the adverse effects of construction-related stormwater runoff discharges. While an exceedance of a numeric action level does not constitute a violation of permit, the Construction General Permit requires dischargers with numeric action level exceedances to immediately implement additional BMPs and revise their stormwater pollution prevention plans to either prevent pollutants and authorized non-storm water discharges from contaminating stormwater runoff, or to substantially reduce the pollutants to levels consistently below the numeric action levels. Compliance with the Construction General Permit would ensure that stormwater runoff discharges associated with Alternative 1 construction activities would not result in violations of water quality standards and impacts would be less than significant.

Operations

There have not been any recent notices of violation or non-compliance with the existing stormwater discharge permit (Navy, 2020f). Operational activities associated with Alternative 1 are not expected to increase pollutant loadings to the stormwater runoff discharges. Loadings may decrease slightly from current levels due to slightly fewer parking stalls and implementation of low impact development elements (e.g., Katz et al., 2018). For these reasons, stormwater runoff discharges associated with Alternative 1 operations would not result in violations of water quality standards and impacts related to violations of water quality standards would be less than significant.

New Stormwater Drainage Facilities or Expansion of Existing Facilities

As discussed above, implementation of Alternative 1 would not result in larger stormwater runoff volumes that would necessitate an expansion of existing stormwater infrastructure. However, some modifications to the stormwater system may be needed to meet the Navy's sustainable design and low impact development requirements. Therefore, impacts to water resources related to new or expanded stormwater drainage facilities under Alternative 1 would be less than significant.

Impact Conclusion

For the reasons discussed above, Alternative 1 construction and operation activities would result in less than significant impacts to water resources.

3.15.3.3 Alternative 2: Public-Private Development – NAVWAR and Higher Density Mixed Use

Impact Analysis

Impacts to water resources from construction and operation of Alternative 2 would include demolition of existing structures and construction of new facilities for NAVWAR along with public-private mixed-use development. Coverage of the site with impervious surfaces and drainage patters would be similar to those described above for Alternative 1. Alternative 2 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards (e.g., low impact development), degrade surface water quality, or violate water quality standards. Alternative 2 construction and operations would be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to water resources. Given that Alternative 2 would have a larger number of parking stalls than the current facilities, pollutant loadings from vehicles likely would be slightly higher than current loadings. However, with implementation of low impact development features and compliance with permit conditions, this would not result in exceedances of water quality standards. Reductions in the NAVWAR operational functions at OTC that would occur as part of Alternative 2 would not affect water resources.

Impact Conclusion

For the reasons discussed above, Alternative 2 would result in less than significant impacts to water resources.

3.15.3.4 Alternative 3: Public-Private Development – NAVWAR and Lower Density Mixed Use

Impact Analysis

Impacts to water resources from construction and operation of Alternative 3 would be similar to those described previously for Alternative 2. Alternative 3 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards. Alternative 3 construction and operations would be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to water resources. Given that Alternative 3 would have a larger number of parking stalls than the current facilities, pollutant loadings from vehicles likely would be slightly higher than current loadings. However, with implementation of low impact development features and compliance with permit conditions, this would not result in exceedances of water quality standards. Reductions in the

NAVWAR operational functions at OTC that would occur as part of Alternative 3 would not affect water resources.

Impact Conclusion

For the reasons discussed above, Alternative 3 would result in less than significant impacts to water resources.

3.15.3.5 Alternative 4: Public-Private Development – NAVWAR and Higher Density Mixed Use with a Transit Center

Impact Analysis

Impacts to water resources from construction and operations of Alternative 4 would be similar to those described previously for Alternative 2. Alternative 4 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards. Given that Alternative 4 would have a larger number of parking stalls than the current facilities, pollutant loadings from vehicles likely would be slightly higher than current loadings. However, with implementation of low impact development features and compliance with permit conditions, this would not result in exceedances of water quality standards. Reductions in the NAVWAR operational functions at OTC that would occur as part of Alternative 4 would not affect water resources. Consolidation of transit on OTC would not adversely affect water resources because construction and operations would comply with the Construction General Permit and National Pollutant Discharge Elimination System permits that specify development of plans (stormwater pollution prevention plan and stormwater management plans), implementation of best available pollutant control technology and BMPs, and monitoring and reporting requirements necessary to meet water quality criteria and protect the beneficial uses of water resources.

Impact Conclusion

For the reasons discussed above, Alternative 4 would result in less than significant impacts to water resources.

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

Impact Analysis

Impacts to water resources from construction and operations of Alternative 5 would be similar to those described previously for Alternative 2. Alternative 5 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards. Given that Alternative 5 would have a larger number of parking stalls than the current facilities, pollutant loadings from vehicles likely would be slightly higher than current loadings. However, with implementation of low impact development features and compliance with permit conditions, this would not result in exceedances of water quality standards. Reductions in the NAVWAR operational functions at OTC that would occur as part of Alternative 5 would not affect water resources. Consolidation of transit on OTC would not adversely affect water resources because construction and operations would comply with the Construction General Permit and National

Pollutant Discharge Elimination System permits that specify development of plans stormwater pollution prevention plan and stormwater management plans), implementation of best available pollutant control technology and BMPs, and monitoring and reporting requirements necessary to meet water quality criteria and protect the beneficial uses of water resources.

Impact Conclusion

For the reasons discussed above, Alternative 5 would result in less than significant impacts to water resources.

3.15.3.7 Summary of Proposed Management Practices, Potential Monitoring, and Potential Mitigation

No monitoring measures (other than those required by the construction stormwater pollution prevention plan included in WATER MGMT-1, described below) or mitigation measures would be warranted for water resources based on the analysis presented in Section 3.15.3.

Proposed Management Practices

- WATER MGMT-1. Before demolition or construction at OTC, the Navy would establish compliance with the planning requirements contained in the Construction General Permit. The construction contractor would prepare and implement a construction stormwater pollution prevention plan and ensure that all BMPs and other appropriate control measures specified in the permit and stormwater pollution prevention plan were implemented and monitored. If construction dewatering is required, the Navy would obtain a separate Waste Discharge Requirement permit for handling the dewatering effluent.
- WATER MGMT-2. During project construction, the Navy would implement/install all low impact development measures required to comply with Navy building standards.
- WATER MGMT-3. Following construction and prior to project operations, the Navy would obtain an amended stormwater permit (Regional Water Quality Control Board Order No. R9-2014-0037, as Amended by Order No. R9-2017-0010, National Pollutant Discharge Elimination System Permit No. CA0109363–Waste Discharge Requirements for U.S. Department of the Navy [Naval Base Point Loma Permit]) and update the stormwater pollution prevention plan and stormwater management plan to reflect changes in site layout, operations, and risk levels. The Navy would then implement the updated plans. The Navy would also demonstrate that the project complies with the performance objective for site hydrology as required by section 438 of the Energy Independence and Security Act.

3.15.3.8 Summary of Effects and Conclusions

Based on the analysis of potential impacts presented above, there would be no impact to water resources from implementation of the No Action Alternative and less than significant impacts to water resources from implementation of Alternatives 2 through 5.

3.16 Biological Resources

Biological resources generally include plant and animal species and the habitats in which they occur. Plant associations are generally referred to as *vegetation* and animal species are referred to as *wildlife*. Habitat is defined as the resources and conditions present in an area that support plant and wildlife species. This analysis focuses on species that are important to the function of ecosystems and/or are protected under federal or state laws or regulations.

The ROI for evaluation of impacts to biological resources in this EIS includes the footprints of OTC Site 1 and OTC Site 2 and other land area in the immediate vicinity of OTC that may potentially be affected by the project (e.g., from noise or lighting). The ROI does not include any marine habitat because the analysis in Section 3.15, *Water Resources*, found that no significant impacts would result from potential runoff from OTC to San Diego Bay. All construction and operations at OTC would be subject to permit conditions, low impact design standards, stormwater pollution prevention measures, BMPs, and water quality regulations that all focus on reducing and minimizing the effects of surface runoff on San Diego Bay. The ROI for biological resources is therefore confined to disturbed terrestrial habitats.

The ROI for this analysis consists of highly developed land with only sparse ornamental vegetation and no naturally occurring plant species, natural or naturalized wildlife habitats, or plant communities. As a result, the Proposed Action Alternatives has no potential to affect special-status plant species, wildlife habitat, or plant communities, and these resources are not discussed further. Accordingly, the focus of this section is on wildlife species that may transit the area and some bird and bat species that are known to use human-made structures for nesting and/or roosting.

3.16.1 Regulatory Setting

Laws and regulations applicable to biological resources include the following:

- Endangered Species Act
- Migratory Bird Treaty Act
- California Endangered Species Act
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds

3.16.2 Affected Environment

This section describes the existing conditions relative to the presence of transitory wildlife at OTC and in the surrounding ROI. OTC consists of 70.5 acres of highly developed land (primarily buildings and pavement) that provide little to no habitat or resources for wildlife species. There are no naturally occurring plant species or vegetation communities in the project area, and no critical habitat, as defined by the Endangered Species Act, has been designated in the project area.

Wildlife occurrences within the project area are largely transitory, such as bird or bat overflights or small mammals and reptiles transiting the project area. Species that could occur in or transit the project area include urbanized mammal and reptile species such as feral cats (*Felis catus*), black rat (*Rattus rattus*), house mouse (*Mus musculus*), western fence lizard (*Sceloporus occidentalis*), and southern alligator lizard (*Elgaria multicarinata*), as well as common urban bird species such as rock dove (*Columba livia*), European starling (*Sturnus vulgaris*), brewer's blackbird (*Euphagus cyanocephalus*), western gull (*Larus occidentalis*), and American crow (*Corvus brachyrhynchos*).

In addition, a relatively small number of bird species that have the potential to occur at OTC are known to use human-made structures for nesting and/or roosting. Such species include, but are not limited to, barn swallows (*Hirundo rustica*), cliff swallows (*Petrochelidon pyrrhonota*), white-throated swifts (*Aeronautes saxatalis*), barn owls (*Tyto alba*), gulls (*Larus* spp.), killdeer (*Charadrius vociferus*), American robins (*Turdus migratorius*), and house finches (*Haemorhous mexicanus*). The project area is located between two Important Bird Areas within the Pacific Flyway, as recognized by the Audubon Society – San Diego Bay-South and Mission Bay-San Diego River (Audubon Society, 2020). Important Bird Areas are places crucial for nesting, wintering, or migrating birds (Audubon Society, 2020). However, the project area does not provide nesting or foraging habitat for birds that may utilize the Pacific Flyway, including federally and state protected bird species. Birds potentially occurring at or transiting OTC, both migratory and most native-resident bird species, are protected under the Migratory Bird Treaty Act, and their conservation by federal agencies is mandated by EO 13186.

Multiple bat species potentially forage and/or roost in the vicinity of OTC. Such species include the western mastiff bat (*Eumops perotis californicus*) (California species of special concern), Mexican free-tailed bat (*Tadarida brasiliensis*), several myotis species (*Myotis* spp.), western red bat (*Lasiurus blossevillii*) (California species of special concern), big brown bat (*Eptesicus fuscus*), and big free-tailed bat (*Nyctinomops macrotis*) (California species of special concern) (Navy, 2012c). In addition, a number of other bat species occur in the Point Loma region, which have not been recorded in the project area, including the Mexican long-tongued bat (*Choeronycteris mexicana*), western yellow bat (*Lasiurus xanthinus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*), all of which are California species of special concern (CDFW, 2020). Although several bat species have the potential to occur in the general vicinity of OTC, based on the lack of suitable foraging and natural or naturalized habitat, bat occurrences at OTC would be sporadic and transitory. However, multiple bat species are known to roost in buildings and other human-made structures (Lausen and Barclay, 2006; Pfeiffer, 2019), and some bat species may potentially use existing buildings or structures at OTC for roosting.

The Navy conducted a search of U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation to identify the potential occurrence of federally threatened and endangered species in the ROI (USFWS, 2020). The results of the search are summarized in Table 3.16-1.

Table 3.16-1 Federally Listed Wildlife Species Potentially Occurring in the Region of Influence

Common Name	*Scientific Name*	*Federal Listing Status*	*State Listing Status*
Riverside fairy shrimp	*Streptocephalus woottoni*	FE	SE
San Diego fairy shrimp	*Branchinecta sandiegonensis*	FE	SE
California least tern	*Sternula antillarum browni*	FE	SE
coastal California gnatcatcher	*Polioptila californica*	FT	SSC
least Bell's vireo	*Vireo bellii pusillus*	FE	SE
light-footed Ridgway's rail	*Rallus longirostris levipes*	FE	SE
southwestern willow flycatcher	*Empidonax traillii extimus*	FE	SE
western snowy plover	*Charadrius nivosus*	FT	SSC
Pacific pocket mouse	*Perognathus longimembris pacificus*	FE	SSC

Legend: Selections for Listing Status columns include: FE = federal endangered, FT = federal threatened, SE = State endangered, SSC = Species of Special Concern (State designation).
Source: USFWS, 2020.

The search provides a list of all possible federally listed species that might be present in a general area based on known species' ranges and does not specify that any given species occurs within a project area. Although several species are identified in Table 3.16-1, OTC does not contain suitable habitat for any federally listed wildlife species or bird species listed under the California Endangered Species Act, designated as California species of special concern, or species fully protected under California regulations (CDFW, 2020).

3.16.3 Environmental Consequences

This analysis focuses on wildlife types that are important to the function of the ecosystem or are protected under federal or state law or statute. The significance of potential impacts to biological resources is based on:

1. the legal, commercial, recreational, ecological, or scientific importance of the resource
2. the proportion of the resource that would be affected relative to its occurrence in the region
3. the sensitivity of the resource to proposed activities
4. the duration or ecological ramifications of the impact(s)

Impacts to biological resources would be significant if species or habitats of concern were adversely affected over relatively large areas or if disturbances caused reductions in population size or distribution of a special-status species. This section analyzes the potential for direct and indirect impacts to biological resources from implementation of the Proposed Action Alternatives.

- *Direct impacts* are from the immediate result of project activities. Direct impacts may be either temporary (reversible) or permanent (irreversible).
- *Indirect impacts* are caused by or result from project-related activities but occur later in time and can extend beyond the immediate area.

Project effects have been evaluated based upon an understanding of the project area configuration and components and the proposed activities.

3.16.3.1 No Action Alternative

Under the No Action Alternative, redevelopment of OTC to meet NAVWAR's facility requirements would not occur and NAVWAR would continue to operate at OTC. No change from existing conditions would occur and the Navy would continue to periodically maintain and repair the existing facilities. Such activities would temporarily disturb wildlife with noise, human presence, and use of machinery. However, wildlife at OTC is already exposed to such temporary effects. Therefore, the No Action Alternative would result in less than significant impacts to biological resources.

3.16.3.2 Alternative 1: NAVWAR-Only Redevelopment

Under Alternative 1, no natural or naturalized wildlife habitat would be impacted because it does not occur in the ROI. During proposed demolition, construction, repair, and/or renovation activities on OTC Site 1, mammal, reptile, and bird species that may transit the area would largely avoid the project area and not be impacted by the activities. OTC occurs in and is surrounded by a highly developed, heavily trafficked, and night-lit area. Noise, controlled night lighting (see BIO MGMT-3 below), or other temporary, direct impacts associated with demolition, construction, repair, and/or renovation would not have any measurable effect on wildlife species in the vicinity of the project area and would result in less than significant impacts. However, demolition has the potential to wound or kill roosting bats and nesting birds should they be present. Additionally, artificial night lighting that is permanently placed on structures or buildings can disorient and alter foraging habits for birds and bats (Stone et al. 2009; Isaksson 2018). Implementation of the following proposed management practices during demolition, construction, repair, renovation, and/or operation of Alternative 1 would avoid and/or reduce impacts on roosting/nesting bat and bird species:

- BIO MGMT-1. Before the demolition, repair, or renovation of any building or structure that bats could potentially roost in, a qualified biologist would check the building or structure for any evidence of roosting bats. If any bats are detected, they would be passively excluded (prevented from returning once they have exited the building for evening foraging) before demolition repair or renovation activities.
- BIO MGMT-2. If demolition or construction activities take place during the southern California bird breeding season (February 14 to August 31) for resident and migratory birds, as stipulated by the California Department of Fish and Wildlife, a qualified biologist would conduct surveys for nesting birds within a 500-foot radius of the demolition or construction area (including potential building-nesting birds). If nests are detected, 250-foot no-activity buffers would be established around nests to ensure breeding is not disrupted or adversely impacted by demolition and/or construction. Buffers would be maintained until the young fledge or the nests become inactive.
- BIO MGMT-3. All new outdoor nighttime lighting would include bat- and bird-friendly design features such as shielded lights (to reduce ambient light), use of motion detectors and other automatic controls, and lighting design that uses shields to prevent light from shining upward into the sky (American Bird Conservancy, 2019).

As discussed in Section 3.16.2, no federally threatened or endangered species are known to occur within the project area. No suitable habitat exists within OTC for any federally threatened or endangered species. In addition, no population of any species would be significantly impacted relative to its occurrence in the region and the proposed demolition, construction, repair, renovations, and operations would not introduce any novel impacts to the region, as these types of activities and structures are prevalent in the vicinity of the ROI.

Therefore, Alternative 1 would result in less than significant impacts to biological resources.

3.16.3.3 Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use

Impacts to biological resources under Alternative 2 would be similar to those under Alternative 1 but would occur on both OTC Site 1 and OTC Site 2, including additional building demolition and construction. In addition, demolition, construction, repair, and/or renovation impacts under Alternative 2 would occur over an additional 25 years, as compared to Alternative 1. As under Alternative 1, Alternative 2 would occur in a highly urbanized and developed setting and demolition, construction, repair, and/or renovation would not significantly affect biological resources. Building heights under Alternative 2 would be greater than under Alternative 1 (a maximum of 240 feet compared to 55 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing a greater bird collision risk during the operational (post-construction) phase of Alternative 2. Proposed management practices described in Section 3.16.3.2, would be applied under Alternative 2 to avoid and/or minimize potential impacts to wildlife. In addition, the following proposed management practice would be implemented to reduce the potential for bird collisions with buildings and structures:

- BIO MGMT-4. New buildings and structures would incorporate a bird-friendly design to prevent or reduce the likelihood of bird collisions with buildings. Bird-friendly design features include transparent passageways, corners, atria, or courtyards so that birds do not get trapped; interior lighting that is turned off at night or designed to minimize light escaping through windows; and landscaping that is designed to keep birds away from the buildings' façade. Use of nonreflective or opaque glass; external shades (or other devices to reduce glare, transparency, or reflectiveness) on windows; ultraviolet patterned glass; angled glass; and/or louvers can aid in reducing bird collisions (American Bird Conservancy, 2019).

Therefore, Alternative 2 would result in less than significant impacts to biological resources.

3.16.3.4 Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use

Impacts to biological resources under Alternative 3 would be similar to those under Alternative 2. Management practices described in Sections 3.16.3.2 and 3.16.3.3 would be applied under Alternative 3 to avoid and/or minimize potential impacts to wildlife during demolition, construction, repair, renovation and/or operations. Therefore, Alternative 3 would result in less than significant impacts to biological resources.

3.16.3.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center

Impacts to biological resources under Alternative 4 would be similar to those under Alternative 2. As under Alternative 2, Alternative 4 would occur in a highly urbanized and developed setting and demolition, construction, repair, and/or renovation would not significantly affect biological resources. Building heights under Alternative 4 would be greater than under Alternative 2 (a maximum of 350 feet compared to 240 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing an even greater bird collision risk during the operational (post-construction) phase of Alternative 4. Management practices described in Sections 3.16.3.2 and 3.16.3.3, including bird-friendly design features on new buildings and structures, would be applied under Alternative 4 to avoid and/or minimize potential impacts to wildlife. Therefore, Alternative 4 would result in less than significant impacts to biological resources.

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

Impacts to biological resources under Alternative 5 would be similar to those under Alternative 2. As under Alternative 2, Alternative 5 would occur in a highly urbanized and developed setting and demolition, construction, repair, and/or renovation would not significantly affect biological resources. Building heights under Alternative 5 would be greater than under Alternative 2 (a maximum of 350 feet compared to 240 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing an even greater bird collision risk during the operational (post-construction) phase of Alternative 5. Management practices described in Sections 3.16.3.2 and 3.16.3.3, including bird-friendly design features on new buildings and structures, would be applied under Alternative 5 to avoid and/or minimize potential impacts to wildlife. Therefore, Alternative 5 would result in less than significant impacts to biological resources.

3.16.3.7 Summary of Proposed Management Practices, Potential Monitoring, and Potential Mitigation

No monitoring or mitigation measures would be warranted for biological resources based on the analysis presented in Section 3.16.3.

Proposed Management Practices

- BIO MGMT-1. Before demolition, renovation, or repairs of any building or structure that bats could potentially roost in, a qualified biologist will check the structure for any evidence of roosting bats. If any bats are detected, they will be passively excluded (prevented from returning once they have exited the building for evening foraging) before demolition or renovation activities.
- BIO MGMT-2. If demolition or construction activities take place during the bird breeding season (February 14 to August 31), a qualified biologist will conduct surveys for nesting birds within a 500-foot radius of the demolition or construction area (including potential building-nesting birds). If nests are detected, 250-foot no-activity buffers will be established around nests to ensure that breeding is not disrupted or adversely impacted by demolition and/or construction. Buffers will be maintained until the young fledge or the nests become inactive.
- BIO MGMT-3. All new outdoor nighttime lighting would include bat- and bird-friendly design features such as shielded lights (to reduce ambient light), use of motion detectors and other automatic controls, and lighting design that uses shields to prevent light from shining upward into the sky (American Bird Conservancy, 2019).
- BIO MGMT-4. New buildings and structures would incorporate a bird-friendly design to prevent or reduce the likelihood of bird collisions with buildings. Bird-friendly design features include transparent passageways, corners, atria, or courtyards so that birds do not get trapped; interior lighting that is turned off at night or designed to minimize light escaping through windows; and landscaping that is designed to keep birds away from the buildings' façade. Use of nonreflective or opaque glass; external shades (or other devices to reduce glare, transparency, or reflectiveness) on windows; ultraviolet patterned glass; angled glass; and/or louvers can aid in reducing bird collisions (American Bird Conservancy, 2019).

3.16.3.8 Summary of Effects and Conclusions

Based on the analysis presented above, there would be less than significant impacts to biological resources from implementation of any of the alternatives. The implementation of management practices described in Section 3.16.3.7 would further avoid and/or minimize the potential for impacts to biological resources.

3.17 Summary of Potential Impacts to Resources and Impact Avoidance and Minimization

A summary of the potential impacts associated with each of the Proposed Action Alternatives and the No Action Alternative are presented in Tables 3.17-1. Table 3.17-2 provides a comprehensive list of all proposed management practices, potential monitoring measures, and potential mitigation measures identified for the Proposed Action Alternatives.

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Table 3.17-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
Air Quality	**No Impact.** Under the No Action Alternative, Proposed Action would not occur and there would be no change to operational activities at the OTC. Therefore, no impacts to air quality would occur from implementation of the No Action Alternative.	**No Impact.** Under the No Action Alternative, Proposed Action would not occur and there would be no change to operational activities at the OTC. Therefore, no impacts to air quality would occur from implementation of the No Action Alternative.	**Less Than Significant Impact.** Annual conformity-related emissions from construction or operation of Alternative 1 would not exceed the conformity de minimis thresholds of 25 tons per year of VOCs or NOx and therefore would not be subject to the requirements of the General Conformity Rule. Under Alternative 1, construction of the Navy facilities would occur from 2021 through 2025. The maximum annual construction emissions would be below the applicable annual criteria pollutant significance thresholds and would therefore result in less than significant impacts to criteria pollutants. Post-construction, the annual net changes in emissions from operation of Alternative 1 (Alternative 1 minus No Action Alternative) would be minimal and below the significance thresholds for all pollutants. Project-generated traffic would not result in the creation of any local CO impacts. HAP emissions from construction or operation would remain well below the significance thresholds of 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs and thus would result in less than significant impacts. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Section 3.1.5.9 provides management practices intended to reduce air emissions from construction and operation for each action alternative. Therefore, Alternative 1 would result in less than significant impacts to air quality.	**Less Than Significant Impact.** Under Alternative 2, construction of the Navy facilities would occur from 2021 through 2025 and construction of private development would occur from 2026 through 2049. Annual emissions from Alternative 2 would exceed the VOC and NO_x annual significance thresholds of 25 tons per year during combined construction and operation beginning in 2040 and during operations, after construction is completed, beginning in 2050. Further analysis determined that these emissions would not contribute to an exceedance of a national ambient air quality standard. Therefore, Alternative 2 would result in less than significant impacts to criteria pollutants. Alternative 2 would also result in less than significant local CO impacts and less than significant health impacts from HAP emissions. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Therefore, Alternative 2 would result in less than significant impacts to air quality.	**Less Than Significant Impact.** Under Alternative 3, construction and operations emissions would be similar but less than those described under Alternative 2. The maximum annual construction and operation emissions would be below the applicable annual criteria pollutant significance thresholds and would therefore result in less than significant impacts to criteria pollutants. Alternative 3 would also result in less than significant local CO impacts and less than significant health impacts from HAP emissions. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Therefore, Alternative 3 would result in less than significant impacts to air quality.	**Less Than Significant Impact.** Annual conformity-related emissions from construction and operation of Alternative 4 would not exceed the conformity de minimis thresholds of 25 tons per year of VOCs or NOx and therefore would not be subject to the requirements of the General Conformity Rule. A sizeable portion of air emissions from the operation of private development would be beyond the reasonable control of the Navy. Under Alternative 4, construction and operations emissions would be similar to those described under Alternative 2, but greater. Annual emissions from Alternative 4 would exceed the VOC and NO_x annual significance thresholds of 25 tons per year during combined construction and operation beginning in 2035 and during operations, after construction is completed, beginning in 2050. Further analysis determined that these emissions would not contribute to an exceedance of a national ambient air quality standard. Therefore, Alternative 4 would result in less than significant impacts to criteria pollutants. Alternative 4 would also result in less than significant local CO impacts and less than significant health impacts from HAP emissions. Annual GHG emissions from construction and operation activities would increase relative to the No Action Alternative. Therefore, Alternative 4 would result in less than significant impacts to air quality.
Transportation	**Less Than Significant Impact.** The transportation network would likely experience greater baseline demand from 2020 to 2050 with the No Action Alternative. However, under No Action, NAVWAR operations would not add trips to the ROI based on development. Therefore, the No Action Alternative would not result in significant impacts to transportation above that experienced through ambient growth and non-Navy developments.	**Significant Impact.** Alternative 1 would result in significant impacts to eight intersections and one street segment over the baseline conditions. The Navy's analysis identifies potential mitigation measures for the nine impacted locations, of which five would be fully mitigated and four impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 2 would result in 61 significant impacts. The Navy's analysis identifies potential mitigation measures for the 61 impacted locations, of which 32 would be fully mitigated and 29 impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 3 would result in 59 significant impacts. The Navy's analysis identifies potential mitigation measures for the 59 impacted locations, of which 33 would be fully mitigated and 26 impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 4 would result 62 significant impacts. The Navy's analysis identifies potential mitigation measures for the 62 impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.	**Significant Impact.** Alternative 5 would result in the same significant impacts as Alternative 4. The Navy's analysis identifies potential mitigation measures for the 62 impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
Visual Resources	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to visual resources. Therefore, no impacts would occur.	**Less Than Significant Impact.** Alternative 1 would result in the demolition of several existing buildings and building heights would remain similar to existing conditions. Most viewers would not be able to see the changes resulting from Alternative 1. Construction would occur over a 5-year period and visual impacts during construction would be temporary. Modernization of the NAVWAR facilities would result in less than significant to slightly beneficial impacts to visual quality community character, and no impact for other impact criteria such as light and glare, view quality or blockage. Therefore, implementation of Alternative 1 would result in less than significant impacts to visual resources.	**Significant Impact.** Alternative 2 would result in the demolition of all existing buildings on OTC and the construction of new facilities for NAVWAR along with private mixed-use development with buildings up to 240 feet tall. While the site layout and building design are not currently known, simulations were used to consider a representative development of a certain mass and scale associated with Alternative 2. Demolition and construction would occur over a 30-development development window, and construction equipment and materials will be visible and create a temporary impact to visual quality. Long-term impacts range from slight beneficial impacts to visual quality and character, to less than significant impacts to scenic highways, and a significant impact to view quality. The new construction could have an impact resulting from light, glare, shade, and shadow; however, these impacts would be less than significant and could be further reduced by adherence to the management practices described in Section 3.3.4.8. Therefore, implementation of Alternative 2 would result in a significant impact to visual resources.	**Less Than Significant Impact.** Alternative 3 would result in similar impacts to visual resources as described under Alternative 2 under construction and operations. However, the significant impact to view quality could be reduced to less than significant through adherence to the management practices described in Section 3.3.4.8. Therefore, implementation of Alternative 3 would result in a less than significant impacts to visual resources.	**Significant Impact.** Alternative 4 would result in similar construction impacts as described for Alternative 2. Operational impacts would be similar to Alternative 2 but greater, as the private mixed-use development would include buildings up to 350 feet tall and the mass and scale of buildings would be greater. While the site layout and building design are not currently known, simulations were used to consider a representative development of a certain mass and scale associated with Alternative 4. Similar to Alternative 2, the new construction could have an impact resulting from light, glare, shade, and shadow; however, these impacts would be less than significant and could be further reduced by adherence to the management practices described in Section 3.3.4.8. However, long-term impacts range from slight beneficial impacts to visual quality and character, to significant impacts to scenic highways, view quality. While the management practices may reduce or minimize some of these significant impacts, impacts to view quality would remain significant. Therefore, implementation of Alternative 4 would result in a significant impact to visual resources.	**Significant Impact.** Alternative 5 would result in similar impacts to visual resources as described under Alternative 4 under construction and operations, as the buildings would be up to 350 feet tall under Alternative 5 but the density would be slightly reduced. Similar to Alternative 4, the new construction could have an impact resulting from light, glare, shade, and shadow; however, these impacts would be less than significant and could be further reduced by adherence to the management practices described in Section 3.3.4.8. However, long-term impacts range from slight beneficial impacts to visual quality and character, to significant impacts to scenic highways, view quality. While the management practices may reduce or minimize some of these significant impacts, impacts to view quality would remain significant. Therefore, implementation of Alternative 5 would result in a significant impact to visual resources.
Land Use	**No Impact.** Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities. There would be no change to existing land use and thus no impacts to adjacent existing or planned land use would occur.	**No Impact.** Under Alternative 1, no planned changes to existing land use or NAVWAR functions would occur. Alternative 1 is consistent with applicable military, regional, and local plans. It does not change the type or scale of existing land uses at OTC; it only reorganizes the land uses for improved efficiency. Therefore, Alternative 1 would result in no impacts to adjacent existing or planned land use.	**Significant Impact.** Under Alternative 2, new facilities would be constructed for NAVWAR at OTC and the remainder of the site would be used for private development of residential, office, hotel, retail, site circulation, parks, and open space uses. Alternative 2 is consistent with the military and regional plans, and with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan. However, the increased density under Alternative 2 contributes to significant additional proposed growth in dwelling units, population, jobs, and non-residential uses over the targets contained in the community plan. The inconsistency with the community plan land use densities would result in a significant impact.	**Significant Impact.** Alternative 3 would result in similar impacts to those described under Alternative 2. While Alternative 3 includes less development than Alternative 2, the inconsistency with the community plan land use densities would still result in a significant impact.	**Significant Impact.** Under Alternative 4, new facilities would be constructed for NAVWAR at OTC, a transit center would also be consolidated on OTC, and the remainder of the site would be used for private development of residential, office, hotel, retail, site circulation, parks, and open space uses. Alternative 4 would result in similar impacts to those described under Alternative 2. Alternative 4 is consistent with the mix of land uses, including the consolidation of the transit center on OTC, and transit-oriented development goals in the Midway-Pacific Highway Community Plan. Alternative 4 includes more development than Alternative 2, and the inconsistency with the community plan land use densities would result in a significant impact.	**Significant Impact.** Alternative 3 would result in similar impacts to those described under Alternative 2. While Alternative 3 includes less development than Alternative 2, the inconsistency with the community plan land use densities would still result in a significant impact.

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
Socioeconomics	**No Impact.** Under the No Action Alternative, the Proposed Action at OTC would not occur and there would be no impacts to socioeconomic resources with the implementation of the No Action Alternative.	**Less Than Significant Impact.** Alternative 1 would be beneficial in terms of employment, income, and economic activity during the 5-year construction phase. During operations, staffing at NAVWAR would be similar to existing conditions, and no additional permanent population would be added to OTC. Therefore, there would be less than significant impacts under Alternative 1.	**Less Than Significant Impact.** Impacts under Alternative 2 would be beneficial in terms of employment, income, and economic activity, including GCP and state and local government revenue. Population would increase under Alternative 2 as additional housing supply would, over time, attract new residents from outside San Diego County. Impacts of the population increase are considered to be neither adverse nor beneficial; the additional population would increase demands on public services while concurrently adding to government revenue and overall economic activity that fund such services. Similarly, impacts on housing under Alternative 2 would not be beneficial but not significant; increased housing supply would not tend to increase prices or reduce affordability and would more likely tend to improve affordability relative to a condition with a more constrained housing supply. Therefore, there would be less than significant impacts under Alternative 2.	**Less Than Significant Impact.** Impacts under Alternative 3 would be similar to Alternative 2 though slightly reduced, as Alternative 3 includes less density for private mixed uses. Therefore, there would be less than significant impacts under Alternative 3.	**Less Than Significant Impact.** Impacts under Alternative 4 would be similar, though greater than Alternative 2 in terms of s of employment, income, and economic activity, due to the higher density of private mixed-uses, including the consolidation of a transit center on OTC. Impacts from population increase and housing supply would be similar to Alternative 2, neither adverse nor beneficial. Therefore, there would be less than significant impacts under Alternative 4.	**Less Than Significant Impact.** Impacts under Alternative 5 would be similar to Alternative 4 though slightly reduced, as Alternative 5 includes less density for private mixed uses including the consolidation of a transit center on OTC. Therefore, there would be less than significant impacts under Alternative 5.
Cultural Resources	**No Impact.** Under the No Action Alternative, the Proposed Action at OTC would not occur and there would be no impacts to cultural resources with the implementation of the No Action Alternative.	**Less Than Significant Impact.** Alternative 1 would result in the modernization of the facilities on OTC, which would include partial demolition of Consolidated Aircraft Plant 2 Historic District, which would result in the loss of NRHP eligibility. There are no identified archaeological sites on OTC and a low potential for buried unrecorded archaeological resources; however, an impact determination is pending completion of consultation. Consultation with the Kumeyaay did not indicate the presence of TCPs or sacred sites; however, the Native American Heritage Commission indicated the presence of Native American cultural resources in the vicinity of the Proposed Action area. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 1 would result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 2 would result in the demolition of Consolidated Aircraft Plant 2 Historic District, which would result in the loss of NRHP eligibility, and reconstruction of modernized NAVWAR facilities and mixed-use public-private development on OTC. The new construction would introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of OTC and extensively alter their setting. Potential impacts to archaeological resources and TCPs or sacred sites would be the same as under Alternative 1. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 2 would result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 3 would result similar impacts to cultural and historic resources as described for Alternative 2. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 3 would result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 4 would result similar impacts to cultural and historic resources as described for Alternative 2. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 4 would result in less than significant impacts under NEPA.	**Less Than Significant Impact.** Alternative 5 would result similar impacts to cultural and historic resources as described for Alternative 2. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with the SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With the implementation of these measures, Alternative 5 would result in less than significant impacts under NEPA.

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
Hazardous Materials and Wastes	**Less Than Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change in the storage or use of hazardous materials or the generation of hazardous or special wastes. The use, storage, and disposal of hazardous materials, and generation and disposal of hazardous wastes, associated with ongoing and future facility maintenance activities at OTC would continue to be managed in accordance with existing Navy plans and applicable state and federal regulations. Ongoing remediation and monitoring activities related to the management of active IR sites would continue. As such, implementation of the No Action Alternative would not exacerbate existing risks associated with potential contaminant releases to the environment or to human health from contaminant exposures. Therefore, impacts from implementation of the No Action Alternative would be less than significant.	**Less Than Significant Impact.** Under Alternative 1, project construction and operations conducted in accordance with the Spill Prevention, Control, and Countermeasure Plan would minimize risks associated with potential spills or releases of, and potential exposures of humans to, hazardous materials. Hazardous wastes generated during the construction and operations phases of Alternative 1 and managed in accordance with the Waste Management Plan. With proper protocols and in accordance with applicable regulations, handling and disposal of special wastes would not result in contaminant releases or exposures of humans to harmful substances. Continued adherence to established processes and procedures for managing IR sites would minimize impacts to human health and safety. The Navy would accomplish all development planning for Alternative 1 in coordination with future developers, regulatory agencies, and with the public (through the established Restoration Advisory Board process). Therefore, Alternative 1 would result in less than significant impacts to hazardous materials, hazardous wastes, special hazards, and human health and safety.	**Less Than Significant Impact.** The types of impacts related to hazardous materials and wastes, special hazards, and contaminated sites under Alternative 2 would be similar to those described for Alternative 1. However, under Alternative 2, all existing OTC buildings would be demolished, and new construction would occur on both OTC Site 1 and OTC Site 2. This would potentially result in comparatively larger volumes of hazardous wastes and special hazards, along with a greater potential for encountering contaminated soils and groundwater during construction. As with Alternative 1, IR sites would continue to be managed under established processes and procedures and the Navy would accomplish all development planning for Alternative 2 in coordination with future developers, regulatory agencies, and with the public (through the established Restoration Advisory Board process). Therefore, impacts from the implementation of Alternative 2 would be less than significant related to hazardous materials and wastes.	**Less Than Significant Impact.** The types of impacts related to hazardous materials and wastes, special hazards, and IR sites under Alternative 3 would be similar to those described for Alternative 2. Therefore, impacts from the implementation of Alternative 3 would be less than significant related to hazardous materials and wastes.	**Less Than Significant Impact.** Impacts related to hazardous materials, hazardous wastes, and special wastes under Alternative 4 would be similar to those described for Alternative 2, with the exception that the addition of a transit center would potentially add new hazardous materials and hazardous waste streams to OTC. As with Alternative 2, under Alternative 4 hazardous materials, hazardous wastes, and special wastes would be handled, stored, and disposed of in accordance with applicable plans and regulations designed to minimize environmental risks from accidental releases and risks of exposures to humans. IR sites would be managed in the same manner as described under Alternative 1. Therefore, impacts from the implementation of Alternative 4 would be less than significant related to hazardous materials and wastes.	**Less Than Significant Impact.** The types of impacts related to hazardous materials and wastes, special hazards, and IR sites under Alternative 5 would be similar to those described for Alternative 4. Therefore, impacts from the implementation of Alternative 5 would be less than significant related to hazardous materials and wastes.
Public Health and Safety	**Less Than Significant Impact.** **No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change from existing conditions. Therefore, impacts from implementation of the No Action Alternative would be less than significant.	**Less Than Significant Impact.** Under Alternative 1, impacts to public health and safety resources associated with construction, repair, renovation, and/or demolition would include hazards that are typical of most construction sites and would be addressed in a construction site safety plan, and through implementation of standard Occupational Safety and Health Administration and local safety construction guidelines. Outside of the construction site, the ROI is completely developed and occurs in a heavily trafficked, noisy, high-density urban setting that has experienced and will continue to experience other community and property construction projects. Operations under Alternative 1	**Potentially Significant Impact.** Under Alternative 2, impacts during construction would generally be the same as described under Alternative 1, with the exception of a potentially significant impact from construction noise, particularly to locations within 200 feet of OTC. Although noise impacts from construction are generally considered to be temporary, the multi-year duration of construction under Alternative 2 would not be considered temporary. As a result of the extended construction timeframe, implementation of Alternative 2 would result in significant impacts to the noise aspect of public health and safety.	**Potentially Significant Impact.** Impacts under Alternative 3 would be the same as described under Alternative 2, primarily related to construction noise for during the multi-year construction period. As a result of the extended construction timeframe, implementation of Alternative 3 would result in significant impacts to the noise aspect of public health and safety.	**Potentially Significant Impact.** Impacts under Alternative 4 would be the same as described under Alternative 2, primarily related to construction noise for during the multi-year construction period. As a result of the extended construction timeframe, implementation of Alternative 4 would result in significant impacts to the noise aspect of public health and safety.	**Potentially Significant Impact.** Impacts under Alternative 5 would be the same as described under Alternative 2, primarily related to construction noise for during the multi-year construction period. As a result of the extended construction timeframe, implementation of Alternative 5 would result in significant impacts to the noise aspect of public health and safety.

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
		would be similar to current operations at OTC but would occur in a modern facility that would have positive impacts on health, safety, and security. Therefore, Alternative 1 would result in less than significant impacts to public health and safety.				
Environmental Justice and Protection of Children	**No Impact.** Under the No Action Alternative, the Proposed Action would not be implemented and there would be no change to environmental justice communities. Therefore, no impacts to environmental justice populations would occur with the implementation of the No Action Alternative.	**Significant Impact.** Potential environmental justice impacts under Alternative 1 would be considered significant for the transportation resource due to the significant impacts at numerous intersections in the immediate vicinity of OTC. These impacts would tend to increase traffic in that vicinity and adversely affect travel times, and residents of the areas in the immediate vicinity of OTC would be most strongly affected as most travel tends to be close to home. The areas in the immediate vicinity of OTC are either low-income or minority areas, and therefore low-income and minority populations would tend to experience adverse effects disproportionately. The increased traffic in the area would tend to increase health and safety risks from moving vehicles; because there would be adverse health risk associated with increased traffic, there would be a significant impact to protection of children.	**Significant Impact.** Impacts under Alternative 2 would be similar to those described under Alternative 1, but the number of impacted intersections would be greater. Thus, environmental justice impacts related to transportation and protection of children would be significant. Additionally, under Alterative 2, the construction of modernized NAVWAR facilities and mixed-use public-private development on OTC would introduce visual elements that are out of character for 19 historic properties located within 0.5 mile of OTC and extensively alter their setting. The majority of the 19 historic properties would be associated with Hispanic culture pre-1900 and would this result in significant environmental justice impacts under Alternative 2 related to cultural resources.	**Significant Impact.** Impacts under Alternative 3 would be similar to those described under Alternative 2, and result in significant environmental justice impacts related to transportation, protection of children, and cultural resources.	**Significant Impact.** Impacts under Alternative 4 would be similar to those described under Alternative 2, and result in significant environmental justice impacts related to transportation, protection of children, and cultural resources.	**Significant Impact.** Impacts under Alternative 5 would be similar to those described under Alternative 2, and result in significant environmental justice impacts related to transportation, protection of children, and cultural resources.
Public Services	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no induced population growth that would lead to impacts on public services. Therefore, no impacts to public services would occur with implementation of the No Action Alternative.	**Less Than Significant Impact.** Construction and operations associated with Alternative 1 would not increase the permanent population in the ROI. Because there would not be a permanent population increase, no additional public services personnel or facilities would be required. There would, however, be some tax revenue generated by construction that could be used to fund public services with no associated population increase, which could be marginally beneficial to levels of service. Therefore, impacts to public services under Alternative 1 would be beneficial but less than significant.	**Less Than Significant Impact.** Under Alternative 2, approximately 24 additional teachers, 7 new police officers, 6 additional emergency personnel and three new library employees would be required by 2050 to accommodate the estimated increase in population from development. The Navy will work with the city police departments to ensure that response times are not substantially affected by the new development. The costs associated with additional teachers, police officers, fire-rescue resources, and library personnel would be covered by the additional tax revenues and development impact fees. If property remains in federal ownership, city standards for parkland would not apply; however, if the property transfers out of federal ownership, the transferee would be responsible to meet city standards for an additional 26.5 acres of parkland based on the increase in	**Less Than Significant Impact.** Under Alternative 3, impacts to public services would be similar to those described for Alternative 2, though slightly less. Therefore, Alternative 3 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.	**Less Than Significant Impact.** Under Alternative 3, impacts to public services would be similar to those described for Alternative 2, though slightly greater. Under Alternative 4, approximately 37 additional teachers, 11 new police officers, 9 additional emergency personnel and five new library employees would be required by 2050 to accommodate the estimated increase in population from development. An additional 40.2 acres of parkland would be required to meet the city's population-based standard for parkland if the property were to transfer out of federal ownership. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of	**Less Than Significant Impact.** Under Alternative 5, impacts to public services would be similar to those described for Alternative 4, though slightly less. Therefore, Alternative 5 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.

Resource Area	No Action Alternative	Alternative 1: NAVWAR-Only Redevelopment	Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use	Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use	Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center	Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center
			population under Alternative 2. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Therefore, Alternative 2 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.		onsite parks and contribution to acquisition and development of parkland elsewhere within the community. Therefore, Alternative 4 would result in less than significant impacts to public schools, police, fire-rescue, libraries, and parks.	
Infrastructure	**Less Than Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur, and there would be no change to the existing infrastructure system or demand at the OTC. Therefore, the No Action Alternative would result in less than significant impacts to infrastructure or utilities.	**Less Than Significant Impact.** Alternative 1 would result in less than significant impacts to the public water system, wastewater infrastructure, stormwater, infrastructure, municipal solid waste, electrical or natural gas infrastructure, or telecommunications during construction or operations.	**Less Than Significant Impact.** Under Alternative 2, the types of construction impacts would be similar to those under Alternative 1, but the construction period would be longer. For operations, NAVWAR operational demand is anticipated to remain similar to existing conditions under Alternative 2. The private mixed use development included under Alternative 2 would result in an increased demand for water, electricity and natural gas, and increased generation of wastewater and solid waste over the No Action Alternative. There is sufficient capacity to accommodate the increase, and no changes in offsite infrastructure would need to occur. Although it appears that there is sufficient water supply capacity to serve Alternative 2, a Water Supply Assessment would be required by the San Diego Public Utilities Department prior to project implementation to determine the extent of potential water demand increases and necessary infrastructure updates. Therefore, Alternative 2 would result in less than significant impacts to infrastructure or utilities during construction or operations.	**Potentially Significant Impact.** Under Alternative 3, impacts to utilities and infrastructure would be similar to those described for Alternative 2, though slightly less. Therefore, Alternative 3 would result in less than significant impacts to infrastructure or utilities during construction or operations.	**Potentially Significant Impact.** Under Alternative 4, impacts to utilities and infrastructure would be similar to those described for Alternative 2, though slightly greater. NAVWAR operations would be the same as Alternative 2, and the private mixed use development, including the consolidation of a transit center that would occur on OTC, would result in an increased demand for water, electricity and natural gas, and increased generation of wastewater and solid waste over the No Action Alternative. There is sufficient capacity to accommodate the increase, and no changes in offsite infrastructure would need to occur. Although it appears that there is sufficient water supply capacity to serve Alternative 4, a Water Supply Assessment would be required by the San Diego Public Utilities Department prior to project implementation to determine the extent of potential water demand increases and necessary infrastructure updates. Therefore, Alternative 4 would result in less than significant impacts to infrastructure or utilities during construction or operations.	**Potentially Significant Impact.** Under Alternative 5, impacts to utilities and infrastructure would be similar to those described for Alternative 4, though slightly less. Therefore, Alternative 5 would result in less than significant impacts to infrastructure or utilities during construction or operations.
Airspace	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to the heights of structures that currently exist on OTC. The existing building heights are lower than the Part 77 horizontal surface, which is 166 feet above mean sea level. Therefore, no impacts to airspace would occur with implementation of the No Action Alternative.	**No Impact.** Alternative 1 would result in the modernization of the facilities on OTC but building heights would remain the same as existing conditions. There would be no impact to safety of flight in the vicinity. Therefore, no impacts to airspace would occur with implementation of Alternative 1.	**Less Than Significant Impact.** New construction associated with Alternative 2 would result in structures up to 240 feet above mean sea level in height, which would penetrate the Part 77 horizontal surface. This would trigger the Federal Aviation Regulations Part 77 notification requirement. The Navy is coordinating with FAA to ensure that proposed building heights associated with Alternative 2 are compatible with FAA's airspace requirements and do not conflict with general aviation and helicopter activities that currently occur in the area. Assuming FAA approves the construction after its review, building heights associated with Alternative 2 would result in less than significant impacts to airspace.	**Less Than Significant Impact.** New construction associated with Alternative 3 would result in structures of the same height as those described for Alternative 2, or up to 240 feet above mean sea level. Thus, potential impacts and coordination with the FAA would be the same as described for Alternative 2. Assuming FAA approves the construction after its review, building heights associated with Alternative 3 would result in less than significant impacts to airspace.	**Less Than Significant Impact.** New construction associated with Alternative 4 would result in structures up to 350 feet above mean sea level, which would penetrate the Part 77 horizontal surface. Thus, potential impacts and coordination with the FAA would be the same as described for Alternative 2. Assuming FAA approves the construction after its review, building heights associated with Alternative 4 would result in less than significant impacts to airspace.	**Less Than Significant Impact.** New construction associated with Alternative 5 would result in structures of the same height as those described for Alternative 4, or up to 350 feet above mean sea level. Thus, potential impacts and coordination with the FAA would be the same as described for Alternative 2. Assuming FAA approves the construction after its review, building heights associated with Alternative 5 would result in less than significant impacts to airspace.

Resource Area	No Action Alternative	Alternative 1: NAVWAR-Only Redevelopment	Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use	Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use	Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center	Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center
Noise	**No Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline noise levels. Current noise-generating activities at OTC that contribute to the ambient noise environment would continue to occur, but the influence of such noise is inconsequential compared to noise from the airport and vehicle traffic on Interstate 5. Because no changes would occur under the No Action no significant impacts would occur to the noise environment.	**Less Than Significant Impact.** Construction of Alternative 1 would occur through 2025, would not cause substantial long-term changes to the noise environment in the OTC ROI because construction noise would be temporary and City of San Diego construction noise ordinances would be followed. Alternative 1 would not cause any land uses to become incompatible due to noise. Because aircraft activity at San Diego International Airport and vehicular traffic along Interstate 5 and city streets would remain the primary sources of noise and NAVWAR operations at OTC would remain largely unchanged, there would not be significant long-term changes to noise created at OTC and experienced off-site. Therefore, Alternative 1 would result in less than significant impacts to the noise environment.	**Significant Impact.** Unlike Alternative 1, the construction associated with Alternative 2 would occur through 2049 in multiple waves of development. Because construction schedules for the 30-year development window are not available at this time, the construction noise cannot be concluded as insignificant. The extended construction timeframe would cause increased noise levels at noise sensitive locations within 200 feet of OTC, such as the Veteran's Village, Health and Human Services Hospital, and a healthcare facility for an undetermined portion of the 30-year development window. After construction, aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the OTC ROI in terms of long-term permanent sources of noise. With the increased traffic due to the private mixed-use development included under Alternative 2, noise from nearby city streets would increase up to 2.5 dB CNEL but would not exceed the FHWA's definition of a substantial noise increase. Therefore, implementation of Alternative 2 would result in significant impacts to the noise environment.	**Significant Impact.** Similar to Alternative 2, the construction associated with Alternative 3 would occur through 2049 in multiple waves of development and impacts from construction noise would be the same as described under Alternative 2. Noise from nearby city streets would remain a major contributor in the ROI during operations, which would increase up to 2 dB CNEL under Alternative 3 but not exceed the FHWA's definition of a substantial noise increase. Therefore, Alternative 3 would result in significant impacts to the noise environment.	**Significant Impact.** Similar to Alternative 2, the construction associated with Alternative 4 would occur through 2049 in multiple waves of development and impacts from construction noise would be the same as described under Alternative 2. Noise from nearby city streets would remain a major contributor in the ROI during operations, which would increase up to 3 dB CNEL under Alternative 4 but not exceed the FHWA's definition of a substantial noise increase. Therefore, Alternative 4 would result in significant impacts to the noise environment.	**Significant Impact.** Similar to Alternative 2, the construction associated with Alternative 5 would occur through 2049 in multiple waves of development and impacts from construction noise would be the same as described under Alternative 2. Noise from nearby city streets would remain a major contributor in the ROI which would increase up to 3 dB CNEL under Alternative 5 but not exceed the FHWA's definition of a substantial noise increase. Therefore, Alternative 5 would result in significant impacts to the noise environment.
Geological Resources	**Potentially Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline topography, geology, or soils. Therefore, no impacts to topography, geology, or soils would occur with implementation of the No Action Alternative. Operations at OTC would continue in the existing buildings without significant renovations and the buildings would not be updated with required facility seismic upgrades or replaced with buildings meeting modern seismic safety standards. Older OTC facilities that have not undergone seismic retrofits and that are situated on hydraulic fill soils are subject to liquefaction. Therefore, the No Action Alternative could result in significant impacts from geologic hazards.	**Potentially Significant Impact.** Under Alternative 1, minor earthwork would be required for grading, to construct flat surfaces, would result in minimal alteration of existing topography and would occur on previously developed, relatively flat surfaces. No important geological features would be disturbed and appropriate implementation of BMPs there would be a minimal, temporary risk of on-site soil erosion during construction, resulting in no significant impact to geology or soils. Existing buildings at OTC Site 1 would be renovated under Alternative 1 to meet seismic requirements. However, if an active or potentially active fault is identified within OTC, these renovations would have minimal effect on reducing damage to buildings impacted directly by a fault rupture or displacement, resulting in potentially significant impacts from geologic hazards.	**Less Than Significant Impact.** Alternative 2 would require significantly more earthwork and grading than Alternative 1. However, there would be minimal alteration of existing topography and construction would occur on previously developed surfaces. A Faulting, Seismicity, and Geologic Hazards Investigation would be conducted during the planning phase to determine if there are any active faults. Further geotechnical analyses would be conducted if active faults are found. Any new construction under Alternative 2 would adhere to required setbacks from any active fault identified during the geotechnical investigation. All new structures would be designed and constructed to comply with the seismic design criteria identified in the Unified Facilities Criteria, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 2 would result less than significant impacts to geological resources.	**Less Than Significant Impact.** Under Alternative 3, revitalization activities are similar to those described under Alternative 2, but the development envelope for private development would be reduced. Alternative 3 would result in similar amounts of earthwork and grading, there would be minimal alteration of existing topography, and construction would occur on previously developed surfaces. Geotechnical analyses would be conducted, and any new construction would adhere to required seismic design criteria, as described for Alternative 2. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 3 would result less than significant impacts to geological resources.	**Less Than Significant Impact.** Under Alternative 4, revitalization activities are similar to those described under Alternative 2, but a portion of OTC would be developed as a transit center. Alternative 4 would result in similar amounts of earthwork and grading as described under Alternative 2. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Geotechnical analyses would be conducted, and any new construction would adhere to required seismic design criteria, as described for Alternative 2. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 4 would result less than significant impacts to geological resources.	**Less Than Significant Impact.** Under Alternative 5, revitalization activities would be similar to those described under Alternative 3, but a portion of OTC would be developed as a transit center and the development envelope for private development would be slightly reduced. Alternative 5 would result in similar amounts of earthwork and grading as described under Alternative 2. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Geotechnical analyses would be conducted, and any new construction would adhere to required seismic design criteria, as described for Alternative 2. Implementation of proper seismic design, soil erosion programs and a project-specific stormwater pollution prevention plan with associated BMPs, construction and operations under Alternative 5 would result less than significant impacts to geological resources.

Resource Area	*No Action Alternative*	*Alternative 1: NAVWAR-Only Redevelopment*	*Alternative 2: Public-Private Development–NAVWAR and Higher Density Mixed Use*	*Alternative 3: Public-Private Development–NAVWAR and Lower Density Mixed Use*	*Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center*	*Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center*
Water Resources	**Less Than Significant Impact.** Under the No Action Alternative, the Proposed Action would not occur, and this alternative would not result in any changes to existing facilities and land uses at OTC and no impact to water resources would occur. OTC would continue to operate in accordance with the existing stormwater pollution prevention plan and stormwater management plan required by the Navy's Naval Base Point Loma Waste Discharge Requirement permit.	**Less Than Significant Impact.** Alternative 1 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards (e.g., low impact development), degrade surface water quality, or violate water quality standards. Alternative 1 construction and operations would be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to water resources. Implementation of low impact development features and compliance with permit conditions, would not result in exceedances of water quality standards. NAVWAR operational functions at OTC that would occur as part of Alternative 1 would not affect water resources.	**Less Than Significant Impact.** Impacts to water resources from construction and operation of Alternative 2 would be similar to those described for Alternative 1. Alternative 2 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards (e.g., low impact development), degrade surface water quality, or violate water quality standards. Alternative 2 construction and operations would be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to water resources. Implementation of low impact development features and compliance with permit conditions, would not result in exceedances of water quality standards. Reductions in the NAVWAR operational functions at OTC that would occur as part of Alternative 2 would not affect water resources.	**Less Than Significant Impact.** Impacts to water resources from construction and operation of Alternative 3 would be similar to those described previously for Alternative 1. Alternative 3 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards. Alternative 3 construction and operations would be conducted in accordance with applicable stormwater permits that would minimize potentials for impacts to water resources.	**Less Than Significant Impact.** Impacts to water resources from construction and operations of Alternative 4 would be similar to those described previously for Alternative 1. Alternative 4 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards. Consolidation of a transit center on OTC would not adversely affect water resources because construction and operations would comply with the Construction General Permit and National Pollutant Discharge Elimination System permits that specify development of plans (stormwater pollution prevention plan and stormwater management plans), implementation of best available pollutant control technology and BMPs, and monitoring and reporting requirements necessary to meet water quality criteria and protect the beneficial uses of water resources.	**Less Than Significant Impact.** Impacts to water resources from construction and operations of Alternative 5 would be similar to those described previously for Alternative 1. Alternative 5 would not result in substantial changes to stormwater runoff volumes or drainage patterns, require construction of new stormwater runoff drainage facilities, other than those needed to comply with Navy building standards, degrade surface water quality, or violate water quality standards. Consolidation of a transit center on would not adversely affect water resources because construction and operations would comply with the Construction General Permit and National Pollutant Discharge Elimination System permits that specify development of plans (stormwater pollution prevention plan and stormwater management plans), implementation of best available pollutant control technology and BMPs, and monitoring and reporting requirements necessary to meet water quality criteria and protect the beneficial uses of water resources.
Biological Resources	**Less Than Significant Impact.** Under the No Action Alternative, redevelopment of OTC to meet NAVWAR's facility requirements would not occur and NAVWAR would continue to operate at OTC. No change from existing conditions would occur and the Navy would continue to maintain and repair the existing facilities, resulting in less than significant impacts to biological resources.	**Less Than Significant Impact.** Under Alternative 1, no natural wildlife habitat would be impacted because it does not occur in the ROI. During potential demolition, construction, repair, and/or renovation activities on OTC Site 1, mammal and bird species that may transit the area would largely avoid the project area and not be impacted by the activities. OTC occurs in and is surrounded by a highly developed, heavily trafficked, and night-lit area. Noise, night lighting, or other temporary, direct impacts associated with demolition, construction, repair, and/or renovation would not have any measurable effect on wildlife species in the vicinity of the project area and would result in less than significant impacts.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 2 would be similar to those under Alternative 1 but would occur on both OTC Site 1 and OTC Site 2, including additional building demolition and construction. Building heights under Alternative 2 would be greater than under Alternative 1 (a maximum of 240 feet compared to 55 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing a greater bird/bat collision risk. Management measures described in Section 3.16.3.7, including bat- and bird-friendly design features on new buildings and structures, would be applied under Alternative 2 to avoid and/or minimize potential impacts to wildlife during demolition, construction, repair, and/or renovation activities. Therefore, Alternative 2 would result in less than significant impacts to biological resources.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 3 would be similar to those under Alternative 2. Management measures described in Sections 3.16.3.7 would be applied under Alternative 3 to avoid and/minimize or minimize avoid potential impacts to wildlife during demolition, construction, repair, and/or renovation activities. Therefore, Alternative 3 would result in less than significant impacts to biological resources.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 4 would be similar to those under Alternative 2. However, building heights under Alternative 4 would be greater than under Alternative 2 (a maximum of 350 feet compared to 240 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing an even greater bird/bat collision risk. Management measures described in Section 3.16.3.7, including bat- and bird-friendly design features on new buildings and structures, would be applied under Alternative 4 to avoid and/or minimize potential impacts to wildlife during demolition, construction, repair, and/or renovation activities in an already heavily developed and urbanized setting. Therefore, Alternative 4 would result in less than significant impacts to biological resources.	**Less Than Significant Impact.** Impacts to biological resources under Alternative 5 would be similar to those under Alternative 2. However, building heights under Alternative 5 would be greater than under Alternative 2 (a maximum of 350 feet compared to 240 feet) and would be taller than buildings and structures in the immediate vicinity of OTC, thus posing an even greater bird/bat collision risk. Management measures described in Section 3.16.3.7, including bat- and bird-friendly design features on new buildings and structures, would be applied under Alternative 5 to avoid and/or minimize potential impacts to wildlife during demolition, construction, repair, operation, and/or renovation activities in an already heavily developed and urbanized setting. Therefore, Alternative 5 would result in less than significant impacts to biological resources.

Legend: BMPs = best management practices; CO = carbon monoxide; dB = decibel; CNEL = community noise equivalent level; FAA = Federal Aviation Administration; FHWA = Federal Highway Administration; GCP = gross county product; GHG = greenhouse gases; HAP = insert acronym; IR = Installation Restoration; NAVWAR = Naval Information Warfare Systems Command; OTC = Old Town Campus; ROI = Region of Influence.

Table 3.17-2 Proposed Management Practices, Potential Monitoring Measures, and Potential Mitigation

Type	*Measure No.*	*Measure Description*

Management Practice	AQ MGMT-1	*Fugitive Dust Control Plan. Reduces criteria pollutants (PM_{10}, $PM_{2.5}$).* Prior to the start of construction, the Navy would prepare a detailed Fugitive Dust Control Plan to ensure compliance with SDAPCD Rules 51 (Nuisance) and 55 (Fugitive Dust Control) (SDAPCD, 2020a). The plan would incorporate the following measures:
		• Watering: During conditions of dry soil, use water spray/mists to minimize dust emissions generated from earthmoving, grading, bulk material handling, and demolition activities and from the movement of vehicles on unpaved surfaces. When necessary due to dry conditions, apply water at the end of the work day to areas of soils disturbed during the day.
		• Speed Limits: Limit haul truck speeds to 10 miles per hour on any unpaved surface and 15 miles per hour on any paved surface. Post signs throughout the site to remind equipment operators and truck drivers of the speed limits.
		• Inactive Areas: Once earthmoving/grading activities are complete in an area, stabilize disturbed soils in these areas within 5 working days with a non-toxic soil stabilizer or soil wetting agent. Prohibit vehicles from operating on these completed areas.
		• Unpaved Roads: Cover unpaved roads with a non-toxic soil stabilizer or soil wetting agent. Consider covering unpaved roads with a low-silt-content material such as recycled road base or gravel to a minimum of 4 inches.
		• Material Loading: Load materials carefully to minimize the potential for spills or dust creation. Minimize drop height from loader bucket. Implement water spraying as needed to suppress potential dust generation during loading operations. Take care to apply dust suppression water to the top of the load or source material to avoid wetting the truck tires. Do not perform loading during unfavorable weather conditions such as high winds or rain. Remove visible soil material from trucks before they leave loading areas to prevent tracking soil out.
		• Track-out Prevention - To prevent soil haul trucks from tracking soil onto public roads, use at least one of the following measures at each vehicle egress from onsite unpaved surfaces to onsite paved roads or public roads:
		  o Install a pad consisting of washed gravel (minimum size of 1 inch) that is maintained in a clean condition to a depth of at least 6 inches and extending at least 30 feet wide and at least 50 feet long.
		  o Pave the surface at least 100 feet long and at least 20 feet wide.
		  o Use a wheel shaker/wheel spreading device, also known as a rumble grate, consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and at a sufficient width to allow all wheels of vehicle traffic to travel over grate to remove bulk material from tires and vehicle undercarriages before vehicles exit unpaved surfaces.
		  o Install and use a wheel-washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit unpaved surfaces.
		  o Any other control measure or device that prevents track-out onto public roads.
		• Material Hauling: Use properly secured tarps that cover the entire surface area of truck loads. Maintain a minimum of 6 inches of freeboard or water, or otherwise treat the bulk material to minimize loss of material to wind or spillage.
		• Soil Storage Piles: Implement at least one of the following measures:
		  o Enclose material in a three- or four-sided barrier equal to the height of the material.
		  o Apply water at a sufficient quantity and frequency to prevent wind-driven dust.

Type	*Measure No.*	*Measure Description*
		○ Apply a non-toxic dust suppressant that complies with air and water quality agency standards at a sufficient quantity and frequency to prevent wind-driven dust. ○ Install and anchor tarps or plastic over the material. ○ Use surface crusting agents on inactive storage piles. • Paved Roads: Use a street sweeper at least twice per day to remove silt from onsite, paved roads traveled by haul trucks. Remove all track-out at the conclusion of each workday. • Windblown Dust: To avoid fugitive dust during high wind conditions, cease soil disturbance activities if onsite wind speeds exceed 25 miles per hour for at least 5 minutes in an hour. • Monitoring: Designate a person to monitor the dust control program and increase control measures, as necessary, to minimize the generation of dust. This responsibility would extend to after-work hours. • Public Notification: Post a publicly visible sign with the telephone number and person to contact regarding dust complaints.
Management Practice	AQ MGMT-2	*Demolition Plan. Reduces criteria pollutants (PM10, PM2.5) and HAPs (asbestos, lead).* Prior to the start of demolition, the Navy would prepare a detailed demolition plan that complies with SDAPCD Rule 1206 (Asbestos) (SDAPCD, 2020a). The plan would include the following elements: • Identify measures to break up, reuse to the maximum extent practical, and haul away demolition debris. • Describe dust control best practices that would be used. • Identify debris truck haul routes. • Discuss abatement measures for handling and disposing of asbestos-containing building materials and contaminated soil.
Management Practice	AQ MGMT-3	*Tier 4 Construction Equipment. Reduces criteria pollutants and HAPs.* All off-road diesel-powered construction equipment greater than 50 horsepower would meet USEPA Nonroad Final Tier 4 emission standards.
Management Practice	AQ MGMT-4	*Idling Limits. Reduces criteria pollutants, HAPs, and GHGs.* Engine idling of any diesel-powered on-road and off-road equipment during construction would not exceed 5 minutes at any location, except as provided in exceptions to the applicable regulations adopted by CARB regarding idling for such equipment. The contractor would post legible and visible signs in English and Spanish, in designated queuing areas and at the construction site, to remind equipment operators of the five-minute idling limit. The contractor would conduct unscheduled inspections to ensure compliance with these measures.
Management Practice	AQ MGMT-5	*Architectural Coating Limits. Reduces maximum daily criteria pollutants (VOC).* The contractor would limit the quantity of architectural coatings applied during construction so that VOC would not exceed 119 pounds per day in the applied coatings. • At the current SDAPCD VOC limit of 50 grams per liter for general flat coatings (SDAPCD Rule 67.0.1 [Architectural Coatings] [SDAPCD, 2020a]), this measure equates to a daily limit of 285 gallons of coatings per day. • The daily limit for other coatings would be determined using the following formula: quantity of coating (gallons per day) = 285 x 50/(VOC content of other coatings in grams per liter).
Management Practice	AQ MGMT-6	*Engine Maintenance. Reduces criteria pollutants, HAPs, and GHGs.* The construction contractor would maintain and tune engines per manufacturer's specifications to perform at CARB and/or USEPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.

Type	Measure No.	Measure Description
Management Practice	AQ MGMT-7	*Alternative Fuels (Construction). Reduces criteria pollutants, HAPs, and GHGs.* The construction contractor shall use alternative fueled and electric construction equipment where feasible.
Management Practice	AQ MGMT-8	*Low Emission Building Materials. Reduces criteria pollutants (VOC) and HAPs.* Where feasible, the construction contractor would select low-emitting adhesives, paints, coatings, carpet systems, composite wood, agri-fiber products, and others.
Management Practice	AQ MGMT-9	*Cool Roofs. Reduces GHGs.* Building construction would include either (1) roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under the 2019 or newer California Green Building Standards Code (California Building Standards Commission, 2020) or (2) a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under the 2019 or newer California Green Building Standards Code.
Management Practice	AQ MGMT-10	*LEED. Reduces GHGs.* Building construction would achieve LEED Version 4 certification of at least silver through the U.S. Green Building Council (U.S. Green Building Council, 2021). LEED certification is based on standards that encourage the development of energy-efficient and sustainable buildings.
Management Practice	AQ MGMT-11	*Solar Energy. Reduces GHGs.* The project would maximize the use of solar energy through installation of photovoltaic panels, solar water heating systems, or other technologies.
Management Practice	AQ MGMT-12	*Tier 4 Operational Equipment. Reduces criteria pollutants and HAPs.* All off-road diesel-powered equipment greater than 50 horsepower used for operations would meet USEPA Nonroad Final Tier 4 emission standards.
Management Practice	AQ MGMT-13	*Refrigerant Management Plan. Reduces GHGs.* Prior to the initiation of operations, the Navy would prepare a refrigerant management plan for purposes of ensuring compliance of refrigerant usages with USEPA (40 CFR part 82, Subpart F) and CARB (Refrigeration Management Program [CARB, 2010]) regulations and minimizing GHG emissions of refrigerants from future development.
Management Practice	AQ MGMT-14	*Sustainable Landscape Design. Reduces GHGs.* The project would incorporate sustainable landscape design where feasible, including: • Plant trees to provide shade and CO_2 absorption • Use drought-tolerant native vegetation • Reduce use of lawn types that require high levels of irrigation • Use high-efficiency irrigation technology or recycled site water • Design buildings to capture and store rainwater for landscape irrigation
Management Practice	AQ MGMT-15	*Air Filtration. Reduces criteria pollutants (PM_{10}, $PM_{2.5}$) and HAPs.* Building construction would include installation of high-efficiency particulate air filters on residential buildings within 500 feet of Interstate 5.
Management Practice	AQ MGMT-16	*External Source Exposure Reduction. Reduces criteria pollutants and HAPs.* Where feasible, the project design would incorporate the following best practices to reduce the exposure of future OTC residents to pollutant concentrations from external emission sources: • Maximize the distance between new residential buildings and the Interstate 5 freeway; • Avoid siting new residential buildings within 300 feet of any existing dry-cleaning operation or large gas station (at least 3.6 million gallons annual throughput) or within 50 feet of a typical gas station (less than 3.6 million gallons annual throughput);

Type	***Measure No.***	***Measure Description***
		• Design buildings with varying shapes and heights, building articulations (street frontage design elements like edges and corners that help break up building mass), and open spaces between buildings to encourage air flow; • Include solid barriers, such as sound walls, or dense vegetation barriers along the Interstate 5 freeway to reduce leeward pollutant concentrations; • Orient buildings adjacent to freeways such that courtyards and residential units with operable windows and balconies face away from the freeway; • Separate pedestrian walkways from streets and intersections expected to have substantial on-road traffic; and • Site bus stops away from major on-road sources and intersections.

Management Practice	AQ MGMT-17	*Plumbing Fixtures. Reduces GHGs.* The project would use the following plumbing fixtures and appliances:
		• Residential buildings:
		  ○ Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi
		  ○ Standard dishwashers: 4.25 gallons per cycle
		  ○ Compact dishwashers: 3.5 gallons per cycle
		  ○ Clothes washers: water factor of 6 gallons per cubic feet of drum capacity
		• Non-residential buildings:
		  ○ Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code
		  ○ Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code

Management Practice	AQ MGMT-18	*Fireplaces. Reduces criteria pollutants, HAPs, and GHGs.* The private development would have no wood or gas fireplaces.
Management Practice	AQ MGMT-19	*Sustainable Building Materials. Reduces GHGs.* Where feasible, the construction contractor would use building materials that have recycled content or are derived from sustainable or rapidly renewable sources.
Management Practice	AQ MGMT-20	*Passive Cooling. Reduces GHGs.* Where feasible, the project would maximize natural and passive cooling that builds on the proximity of the Pacific Ocean by employing building design that incorporates vents oriented to capture prevailing winds; ceiling vaults; thermal chimneys, etc. to facilitate air movement. Living spaces would be designed to receive adequate ventilation when windows are open.
Management Practice	AQ MGMT-21	*Innovative Design. Reduces GHGs.* The project would conserve energy use through innovative site design and building orientation that address factors such as sunshade patterns landscape, sunscreens, window sunshades, extended roof eaves, and low emissivity ("low-e") window glass.
Management Practice	AQ MGMT-22	*Electric Vehicle Charging. Reduces criteria pollutants, HAPs, and GHGs.* The project would include at least 50 percent of the total required listed cabinets, boxes, or enclosures with the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use. This measure applies to both residential and non-residential uses.
Management Practice	AQ MGMT-23	*Bicycle Parking. Reduces criteria pollutants, HAPs, and GHGs.* The project would provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5) for each non-residential use.

Type	Measure No.	Measure Description
Management Practice	AQ MGMT-24	*Bicycle Lanes. Reduces criteria pollutants, HAPs, and GHGs.* The project would include dedicated bicycle lanes that connect to other communities and to the regional bicycle network.
Management Practice	AQ MGMT-25	*Designated Parking. Reduces criteria pollutants, HAPs, and GHGs.* The project would provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles (electric vehicles excluded) in the following quantities for each non-residential use: • 0-9 required parking spaces: 0 designated spaces • 10-25 required parking spaces: 2 designated spaces • 26-50 required parking spaces: 4 designated spaces • 51-75 required parking spaces: 6 designated spaces • 76-100 required parking spaces: 9 designated spaces • 101-150 required parking spaces: 11 designated spaces • 151-200 required parking spaces: 18 designated spaces • >200 required parking spaces: At least 10% of total The number of required parking spaces is set by the San Diego Municipal Code (Chapter 14).
Management Practice	AQ MGMT-26	*Transit Passes. Reduces criteria pollutants, HAPs, and GHGs.* The developer would provide discounted transit passes to residents.
Management Practice	AQ MGMT-27	*Pedestrian Network. Reduces criteria pollutants, HAPs, and GHGs.* The project would be designed to include a complete, functional, and interconnected pedestrian network where feasible.
Management Practice	AQ MGMT-28	*Employee Shuttle. Reduces criteria pollutants, HAPs, and GHGs.* The Navy would coordinate with SANDAG and Metropolitan Transit System to reduce congestion in Midway - Pacific Highway and adjacent communities from vehicles traveling to and from Naval Base Point Loma facilities through the implementation of a federal- and/or regionally funded employee shuttle between Naval Base Point Loma, NAVWAR, and the Old Town Transit Center during morning and afternoon peak travel periods and provision of parking for Naval Base Point Loma employees at NAVWAR.
Management Practice	AQ MGMT-29	*Shower Facilities. Reduces criteria pollutants, HAPs, and GHGs.* Each building that would accommodate over 10 non-residential tenant occupants (employees) would include the following changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code: • 11-50 employees: 1 shower stall and 2 two-tier lockers. • 51-100 employees: 1 shower stall and 3 two-tier lockers. • 101-200 employees: 1 shower stall and 4 two-tier lockers. • Over 200 employees: 1 shower stall plus 1 additional shower stall for each 200 additional tenant occupants, and 1 two-tier locker plus 1 two-tier locker for each 50 additional tenant occupants.
Management Practice	AQ MGMT-30	*Transit Stops. Reduces criteria pollutants, HAPs, and GHGs.* The project would accommodate existing or new transit stops that provide convenient access to high activity/density areas and contain comfortable walk and wait environments for customers.

Type	Measure No.	Measure Description
Management Practice	AQ MGMT-31	*Alternative Fuels (Operation). Reduces criteria pollutants, HAPs, and GHGs.* The Navy shall use alternative fueled or electric mobile operational equipment where feasible.
Management Practice	TRANS MGMT-1	*Implement TDM program to reduce single-occupancy vehicle trips induced by the Proposed Action.* TDM involves a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length to help achieve more efficient and sustainable transportation facilities. TDM can help reduce the single-occupancy vehicle trips by providing users with incentives to seek alternative forms of transportation along with information about programs and services. TDM can be beneficial to all users, including residents, employees, guests, property owners/managers, and the community as a whole. Appendix E, Section 27 provides a full list of TDM strategies for consideration.
Management Practice	TRANS MGMT-2	*Use TSM technology to improve traffic operations along various corridors.* TSM involves the use of technology to manage and more efficiently operate the transportation infrastructure. For example, the City of San Diego has a plan for an Intelligent Transportation Systems program on key transportation corridors within the City. Intelligent Transportation Systems enables the operation of intersections as part of a coordinated system, allows for remote intersection monitoring from the City's Traffic Management Center, and provides flexibility to remotely change signal timing in response to changes in traffic flow based on fluctuating demand or incident impacts (potentially improving LOS). Intersection improvements designed to address the significant impacts of the Proposed Actions consist of the design, the construction, and integration of Intelligent Transportation Systems improvements, which include, but are not limited to: vehicle detection, computer hardware and networking, fiber-optic communication system upgrades, closed circuit TV cameras, changeable message signs, blank-out signs, equipment and networking management, traffic signal modifications, Traffic Management Center and Decision Support System integration, software licensing, high resolution data, connected vehicle technology, upgrading outdated software and equipment, adaptive traffic signal controllers and cabinets, lane control management, and other improvements to the Intelligent Transportation Systems network.
Management Practice	TRANS MGMT-3	*Establish a process for future project-specific level clearances.* The EIS recommends establishment of the following process for future project-specific level clearances. Prior to approval of any discretionary project that is forecast to generate more than 100 peak hour trips, the project developers shall prepare a traffic improvement analysis for any facilities under the jurisdiction of the City of San Diego at which the project is anticipated to contribute more than 50 peak hour trips and where a significant unavoidable impact was calculated. Agencies should consider Intelligent Transportation Systems improvements if transportation analysis demonstrates such improvements can achieve acceptable vehicle LOS.
Management Practice	TRANS MGMT-4	*Coordinate with appropriate agencies on potential transit network efficiencies*. The EIS recommends further evaluation on the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Actions should provide transit signal priority improvements. Transit signal priority technologies would be implemented or developed by appropriate local transportation agencies. Cost share would be determined by any future development agreements and associated developer impact fees prior to any lease or land transfer agreement. • Midway Drive, between East Drive to Rosecrans Street • Rosecrans Street, between Dewey Road and Pacific Highway • Pacific Highway, between Friars Road and Washington Street • Taylor Street, between Presidio Drive and Interstate 8 Eastbound Ramps

Type	Measure No.	Measure Description
Management Practice	TRANS MGMT-5	*Coordinate with appropriate agencies to prepare a Transit Mobility Plan for the Proposed Actions that include a transit center*. The plan would propose to consolidate transition operations on OTC. The Transit Mobility Plan would be implemented or developed by appropriate local transportation agencies. Cost share would be determined by any future development agreements and associated developer impact fees prior to any lease or land transfer agreement.
Management Practice	VIS MGMT-1	*Limitations to Avoid Silhouetting against the Ocean Horizon.* Any efforts that can be done to limit the number of buildings that are silhouetted against the horizon line of the Pacific Ocean would be instrumental in lowering the adversity of view impacts. The ability to step down buildings with perhaps some buildings still piercing the horizon line would be an alternative to consider that would minimize this impact. A single tower or multiple tall towers that break this line without a transition of other buildings around it that are shorter focuses the attention on a stark contrast in scale change. Specific areas of concern include the northwest views from North, Central and South Mission Hills sub-areas looking towards the Pacific Ocean to the west. If the north end of OTC Site 1 is tapered and pulled back from this location, many public and private views would still see the Pacific Ocean to the west and northwest, although much of the view may still be blocked by buildings. This proposed management measure could reduce impacts to the following KOPs: • KOP 7 as seen from Old Town Avenue • KOP 8 as seen from Presidio Park • KOP 9 as seen from Altamirano in North Mission Hills • KOP 10 as seen from Hayden/Linwood from Central Mission Hills
Management Practice	VIS MGMT-2	*Height Limitation to Avoid Silhouetting against the Sky.* A building that extends above the top of landforms from various viewpoints would be more impactful than a building that is low enough to see landforms to the west (Cabrillo Point and the Point Loma Peninsula as seen from the east) and to the east (Mission Hills/Presidio and North Mission Valley landforms as seen from the west). It would not be possible to avoid sky silhouetting in all areas of the viewshed. Only those viewing locations at higher elevations would be positively affected by this change. Areas of concern would include buildings seen from the Midway District area around Sports Arena, Rosecrans, and Midway. This proposed management measure could reduce impacts to the following KOPs: • KOP 3 as seen from Sports Arena Boulevard and Rosecrans Street • KOP 7 as seen from Old Town Avenue • KOP 8 as seen from Presidio Park • KOP 9 as seen from Altamirano in North Mission Hills • KOP 10 as seen from Hayden/Linwood from Central Mission Hills
Management Practice	VIS MGMT-3	*Stepping Down Building Heights to Adjacent Areas.* If some buildings were kept tall and pierced the ocean’s horizon line or those of adjacent landforms, it would still be effective to lower the overall sense of scale by stepping down buildings in all directions. This proposed management measure could reduce impacts to the following KOPs: • KOP 3 as seen from Sports Arena Boulevard and Rosecrans Street • KOP 6 as seen from Old Town State Park • KOP 7 as seen from Old Town Avenue

Type	*Measure No.*	*Measure Description*
		• KOP 8 as seen from Presidio Park • KOP 9 as seen from Altamirano in North Mission Hills • KOP 10 as seen from Hayden/Linwood from Central Mission Hills
Management Practice	VIS MGMT-4	*View Corridors to be Kept Open*. Making a tower taller and creating gaps between other buildings may resolve some view corridor problems. However, what may allow some view corridors to be more open may force the bulk of the massing to another location that may increase the view blockage in another view corridor. But the San Diego sub-region has specific viewing locations with public and major private views in known areas. It has clear sub-regionally important viewing scenes that are most visible to these viewing locations. So, with some level of effort, it would be possible to find the best locations for building gaps and building orientation. The important viewing scenes of greatest concern tend to be from the northeast looking to the southwest with views of San Diego Bay, Coronado, Cabrillo Point, and the Pacific Ocean. This proposed management measure could reduce impacts to the following KOPs: • KOP 7 as seen from Old Town Avenue • KOP 8 as seen from Presidio Park • KOP 9 as seen from Altamirano in North Mission Hills
Management Practice	VIS MGMT-5	*Centralized Massing to Minimize the Number of Buildings*. Many of the alternatives have a number of building towers. These narrow but tall buildings tend to make the complex look like a city downtown instead of a major complex of related buildings. In addition, the offsets of buildings that are not aligned with each other can contribute to more of the corridors being blocked. This would be like a forest of trees that are not aligned with each other compared to an agricultural orchard where views are obstructed through certain viewing angles, but not at all from other angles. To avoid this phenomenon, less towers that are more massive in bulk and that are aligned with the northeast to southwest corridor alignment could improve the opening of view corridors and lower the sense of scale that the multiple buildings may be exaggerating. This proposed management measure could reduce impacts to the following KOPs: • KOP 3 as seen from Sports Arena Boulevard and Rosecrans Street • KOP 6 as seen from Old Town State Park • KOP 7 as seen from Old Town Avenue • KOP 8 as seen from Presidio Park • KOP 9 as seen from Altamirano in North Mission Hills
Management Practice	VIS MGMT-6	*Conceal or Integrate Parking Garages.* Looking from the west side of OTC Site 2 or from many parts of OTC Site 1, the presence of parking structures would not be significant of a visual quality issue. This assumes that parking structures do not allow for large openings in the elevations that allow a person to see parked cars and hanging lights and utility piping. A lower parapet style wall to conceal parked cars and a brow from the upper floor are both essential to limit visual penetration into the structure and vehicle light and parking garage lighting to spill out. The exterior materials must be made to relate to the adjacent building elevations and materials. The use of a vertical perforated screens or patterned laser cut metal panels or offsetting planes that allow air and light in, but that obscure clear views in would be positive. This proposed management measure could minimize impacts to the following KOPs:

Type	*Measure No.*	*Measure Description*
		• KOP 1 as seen from southbound Interstate 5 traffic • KOP 4 as seen from Midway Drive • KOP 7 as seen from Old Town Avenue • KOP 9 as seen from Altamirano in North Mission Hills
Management Practice	VIS MGMT-7	*Maintain Horizontal Banding and Fenestration on Buildings.* It is common for architecture to portray dynamic vertical elements to accentuate the overall scale and iconic power of the building. However, the overall structure of tall buildings is already strongly vertical. Horizontal banding and fenestration that sets each floor as a horizontal design element helps to reduce the apparent size of the building. This proposed management measure could reduce impacts to all KOPs.
Management Practice	VIS MGMT-8	*Integrate and Connect a Series of Plazas, Streets and Spaces.* A strong foundation of an elevated or terraced set of open-air spaces at the ground levels of buildings could make the project feel as though it is a campus-like setting instead of a series of buildings and streets like many downtown areas. This space would also help in creating and maintaining some of the view corridors across OTC. This proposed management measure could minimize impacts to the following KOPs: • KOP 7 as seen from Old Town Avenue • KOP 9 as seen from Altamirano in North Mission Hills • KOP 10 as seen from Hayden/Linwood from Central Mission Hills
Management Practice	VIS MGMT-9	Exterior lighting could be architecturally integrated with the character of all structures, energy-efficient, and shielded or recessed so that direct glare and reflections would be confined, to the maximum extent feasible, within the boundaries of OTC.
Management Practice	VIS MGMT-10	Obtrusive light could be minimized by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and light required for the development could be directed downward to minimize spill over onto adjacent properties and reduce vertical glare or up-lighting.
Management Practice	VIS MGMT-11	The project could be required to meet the lighting standards contained in the CALGreen Code for green building standards. This code is issued by the Building Standard Commission of the California Department of General Services.
Management Practice	VIS MGMT-12	A lighting plan consistent with the U.S. Green Building Council's LEED Green Building Rating System requirements could be developed. The project could achieve at least the U.S. Green Building Council's LEED v4 Silver certification. Consistency with LEED requirements could reduce both the generation of exterior light and the potential for light trespass to affect off-site areas.
Management Practice	VIS MGMT-13	LED light fixtures could be used for all interior and exterior lighting and fixtures and could be selected based on architectural aesthetic, efficiency, maintenance, and glare control.
Management Practice	VIS MGMT-14	Professionally recommended lighting levels could be determined for each activity area to prevent over-lighting and reduce electricity consumption.
Management Practice	VIS MGMT-15	Shielded fixtures with efficient light bulbs could be used in the parking lot to prevent any glare and light spillage beyond the property line. Shielded fixtures would also help in preventing light pollution of the dark sky.
Management Practice	VIS MGMT-16	To protect spill over on Interstate 5 and the Pacific Highway, luminaries would be shielded, reduced in intensity, or otherwise protected from view to reduce the brightness of a light source within 10 degrees from a driver's normal line-of-sight.

Type	***Measure No.***	***Measure Description***
Management Practice	VIS MGMT-17	The maximum measurable luminance of the illuminated building façade would not exceed 40 candela per square meter. Additionally, an area weighted average of field measurements would not exceed 10 candela per square meter for any single contiguous façade area greater than 7,500 square feet in area.
Management Practice	VIS MGMT-18	Glass used in building façades could be anti-reflective or treated with an anti-reflective coating in order to minimize glare.
Management Practice	VIS MGMT-19	The following treatments would not be allowed as part of the Proposed Action Alternatives materials: • Reflective glass that exceeds 50 percent of any building surface and none on the bottom three floors • Mirrored glass • Black glass that exceeds 25 percent of any surface of a building • Metal building materials that exceed 50 percent of any street facing surface • Exposed concrete that exceeds 50 percent of any building The following use of building materials would be encouraged: • natural stone • galvanized metal • matte or low gloss painted materials including steel, metal, and wood • precast concrete panels with low reflectivity • clear or lightly tinted glass • brushed stainless steel versus polished stainless steel • anodized aluminum • composite panels that are not pure or bright white
Management Practice	HAZ MGMT-1	Hazardous materials would be identified and remediated in compliance with all applicable regulations prior to demolition or renovation. Compliance with regulations would be included in any construction, demolition, or renovation contract language.
Management Practice	HAZ MGMT-2	IR sites would continue to be managed under the IR Program coordinated with the San Diego Regional Water Quality Control Board and the California Department of Toxic Substances Control. These agencies would require that existing site conditions (e.g., uncontained sites, sites with land use controls) be compatible with proposed future land uses for the site.
Management Practice	PHS MGMT-1	Implement all applicable federal and state regulations for demolition and construction including construction safety BMPs and preparation of a construction site safety plan.
Management Practice	PHS MGMT-2	Any reconfiguration, upgrading, or addition of new electromagnetically capable equipment would undergo electromagnetic interference and radiation hazards studies prior to implementation.
Management Practice	PHS MGMT-3	Submit proposed mixed-use development project plans for a "Crime Prevention Through Environmental Design Review" by the City of San Diego and San Diego Police Department. The review procedure is designed to ensure emergency response times are not significantly impacted by new development.
Management Practice	PHS MGMT-4	Consult with FAA during the environmental review phase of the Proposed Action Alternatives to gain approval to penetrate various clearance surfaces.

Type	*Measure No.*	*Measure Description*
Management Practice	INFRA MGMT-1	Conduct a Water Supply Assessment in collaboration with the San Diego Public Utilities Department and procure/design potable water supply system to meet capacity demand.
Management Practice	GEO MGMT-1	Standard engineering measures would be implemented and in compliance with the Construction General Permit, including implementation of a project-specific stormwater pollution prevention plan with associated BMPs to minimize erosion and stabilize soils.
Management Practice	GEO MGMT-2	Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site.
Management Practice	GEO MGMT-3	A subsurface geotechnical investigation and fault hazard investigation would be conducted to determine soil properties in addition to the seismic and liquefaction hazards for the project site. All new structures would be designed and constructed to comply with the seismic design criteria identified in the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. If needed, measures identified in the geotechnical investigation would be implemented to minimize impacts associated with specific hazards (SANDAG, 2014a). These may include but are not limited to the following: • *Rupture of a known earthquake fault*: any new construction would adhere to required setbacks from any active fault identified during the geotechnical investigation. • *Liquefaction*: (1) in-situ ground improvement methods (e.g., densification or solidification), (2) transferring of load to underlying bearing layers that are non-liquefiable, or (3) excavation of susceptible soils and replacement with compacted engineered fill. • *Lateral spread*: (1) in-situ ground improvement methods (e.g., densification or solidification), (2) designing the foundation to resist horizontal permanent ground displacement, or (3) subsurface barrier walls. • *Compressible soils*: (1) in-situ densification of compressible soils, (2) transferring of load to underlying non-compressible layers (i.e., through the use of pile or drilled shaft foundations), and (3) surcharging or excavation of compressible soils and replacement with compacted engineered fill. • *Expansive soils*: (1) drainage-control devices to limit water infiltration near foundation, (2) excavation of expansive soils and replacement with compacted engineered fill, and (3) support of the new structures on piles that are designed to resist impacts of expansive soils.
Management Practice	WATER MGMT-1	Before demolition or construction at OTC, the Navy would establish compliance with the planning requirements contained in the Construction General Permit. The construction contractor would prepare and implement a construction stormwater pollution prevention plan and ensure that all BMPs and other appropriate control measures specified in the permit and stormwater pollution prevention plan were implemented and monitored. If construction dewatering is required, the Navy would obtain a separate Waste Discharge Requirement permit for handling the dewatering effluent.
Management Practice	WATER MGMT-2	During project construction, the Navy would implement/install all low impact development measures required to comply with Navy building standards.
Management Practice	WATER MGMT-3	Following construction and prior to project operations, the Navy would obtain an amended stormwater permit (Regional Water Quality Control Board Order No. R9-2014-0037, as Amended by Order No. R9-2017-0010, National Pollutant Discharge Elimination

Type	Measure No.	Measure Description
		System Permit No. CA0109363–Waste Discharge Requirements for U.S. Department of the Navy [Naval Base Point Loma Permit]) and update the stormwater pollution prevention plan and stormwater management plan to reflect changes in site layout, operations, and risk levels. The Navy would then implement the updated plans. The Navy would also demonstrate that the project complies with the performance objective for site hydrology as required by section 438 of the Energy Independence and Security Act.
Management Practice	BIO MGMT-1	Before demolition, renovation, or repairs of any building or structure that bats could potentially roost in, a qualified biologist will check the structure for any evidence of roosting bats. If any bats are detected, they will be passively excluded (prevented from returning once they have exited the building for evening foraging) before demolition or renovation activities.
Management Practice	BIO MGMT-2	If demolition or construction activities take place during the bird breeding season (February 14 to August 31), a qualified biologist will conduct surveys for nesting birds within a 500-foot radius of the demolition or construction area (including potential building-nesting birds). If nests are detected, 250-foot no-activity buffers will be established around nests to ensure that breeding is not disrupted or adversely impacted by demolition and/or construction. Buffers will be maintained until the young fledge or the nests become inactive.
Management Practice	BIO MGMT-3	All new outdoor nighttime lighting would include bat- and bird-friendly design features such as shielded lights (to reduce ambient light), use of motion detectors and other automatic controls, and lighting design that uses shields to prevent light from shining upward into the sky (American Bird Conservancy, 2019).
Management Practice	BIO MGMT-4	New buildings and structures would incorporate a bird-friendly design to prevent or reduce the likelihood of bird collisions with buildings. Bird-friendly design features include transparent passageways, corners, atria, or courtyards so that birds do not get trapped; interior lighting that is turned off at night or designed to minimize light escaping through windows; and landscaping that is designed to keep birds away from the buildings' façade. Use of nonreflective or opaque glass; external shades (or other devices to reduce glare, transparency, or reflectiveness) on windows; ultraviolet patterned glass; angled glass; and/or louvers can aid in reducing bird collisions (American Bird Conservancy, 2019).
Monitoring Measure	CUL MON-1	To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO, Tribes, and other interested parties. If an archaeological resource were discovered during construction, the Navy would follow Stipulation X of the Naval Base Point Loma Programmatic Agreement. As such, the Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until the Navy concludes consultation with SHPO and other parties to the Programmatic Agreement regarding the discovery.
Monitoring Measure	HAZ MON-1	The Navy Officer in Charge of Construction would monitor and confirm that contractors conducting work are complying with all applicable regulations regarding the identification, remediation, handling, and disposal of hazardous materials and wastes through regular inspection of documents and work sites.
Potential Mitigation Measure	AQ MIT-1	Within six months of the completion of the OTC EIS ROD and every three years thereafter until buildout, the Navy shall provide SANDAG with population and employment projections for OTC to assist SANDAG in updating its regional growth projections. Upon SDAPCD request, the Navy shall report an accounting of new project emissions that would occur within San Diego County to demonstrate that these emissions do not exceed the Navy/U.S. Marine Corps emissions growth projections identified in the 2020 Ozone Plan (1.08 and 8.34 tons per day of VOC and NO_x).

Type	*Measure No.*	*Measure Description*
Potential Mitigation Measure	TRANS MIT-1	*Intersection #2. Taylor Street/Interstate 8 EB Ramps* – Per the Mission Valley Community Plan, the entirety of Hotel Circle would be transformed from a bi-directional collector to a one-way couplet running in the clockwise direction. As part of this network change, the Taylor Street/Interstate 8 Eastbound Ramps interchange would be eliminated and replaced by a new signalized interchange at Interstate 8 with the future connection of Via Las Cumbres. Given the unknown timing for implementation and the lack of an identified funding source in the Mission Valley Community Plan, the impact at this intersection remains significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-2	*Intersection #6. Rosecrans Street/Taylor Street/Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of the Proposed Action, and implementation would mitigate the impact to below a level of significance
Potential Mitigation Measure	TRANS MIT-3	*Intersection #7. Rosecrans Street/Jefferson Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located within close proximity to the Rosecrans Street/Taylor Street/Pacific Highway signalized intersection (350 feet) which would be less than ideal for installing a signal and it would not be expected that the intersection would meet signal warrants given the very low minor street volumes on Jefferson Street. The provision of an additional signal on this segment of Rosecrans Street where heavy through traffic exists would not be beneficial to the major street traffic flow. Based on these findings, the EIS does not recommend any improvements and the impact at this intersection remains significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-4	*Intersection #8. Camino Del Rio West/Hancock Street* – The intersection is built out and has no additional right-of-way. Additional through lanes on Camino Del Rio West are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

Type	*Measure No.*	*Measure Description*
Potential Mitigation Measure	TRANS MIT-5	*Intersection #11. Rosecrans Street/Sports Arena Boulevard* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane. The planned improvements allow southbound movements to continue on Sports Arena Boulevard through the intersection. Notably, vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino Del Rio West. With the improvements proposed at this intersection, the Community Plan reports LOS D results. The additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, the EIS recommends implementation of the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-6	*Intersection #12. Rosecrans Street/Midway Drive* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes an exclusive southbound right-turn lane with an overlap phase, a westbound right-turn overlap phase, and an eastbound right-turn overlap phase. With the improvements proposed at this intersection, the Community Plan reports LOS E results, concluding the impact remains significant and unavoidable. With the additional traffic added by the Proposed Action, the intersection continues to operate at LOS E. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, the EIS recommends implementation of the Community Plan improvements, where feasible.
Potential Mitigation Measure	TRANS MIT-7	*Intersection #13. Rosecrans Street/Lytton Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes right-turn overlap phasing in the northbound, southbound, and westbound directions. A second eastbound left-turn lane is proposed. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-8	*Intersection #14. Lytton Street/Barnett Avenue/Truxtun Road* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Constructing an eastbound dedicated right-turn lane within the existing curb-to-curb width would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-9	*Intersection #15. Midway Drive/Enterprise Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/Barnett Avenue intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action to the westbound right-turning movement is substantial. Those additional trips result in a significant delay for southbound right-turns from Enterprise Street onto Midway Drive. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/Barnett Avenue intersection, reconstructing this intersection in combination with the Midway/Barnett Avenue intersection into a signalized four-way intersection would be required to partially mitigate this impact.
Potential Mitigation Measure	TRANS MIT-10	*Intersection #16. Midway Drive/Barnett Avenue* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/Enterprise Street intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action to the

Type	Measure No.	Measure Description
		southbound right-turning and eastbound left-turning movements is substantial. Those additional trips result in a significant delay at this intersection. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/Enterprise Street, reconstructing this intersection in combination with the Midway Drive/Enterprise Street intersection into a signalized four-way intersection would be required to partially mitigate this impact.
Potential Mitigation Measure	TRANS MIT-11	*Intersection #18. Pacific Highway/Kurtz Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. With the improvements proposed at this intersection, the Community Plan reports high LOS D results. However, the additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-12	*Intersection #19. Pacific Highway/Sports Arena Boulevard* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action, acceptable LOS operations would continue to occur. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance
Potential Mitigation Measure	TRANS MIT-13	*Intersection #20. Pacific Highway/Enterprise Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for OTC. With future development of the Proposed Action, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes are also needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-14	*Intersection #22. Old Town Avenue/San Diego Avenue* – There are no planned improvements in the Old Town Community Plan at this intersection. The intersection is built out with regard to available right-of-way. Additional lanes on intersection approaches are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Therefore, no improvements are recommended and the impact at this intersection remains significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-15	*Intersection #23. Old Town Avenue/Moore Street* – Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing changes from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Caltrans and SANDAG, as part of the Airport Connectivity Analysis, have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue

Type	Measure No.	Measure Description
		intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/Moore Street intersection that effectively operates as the Interstate 5 North interchange with Old Town Avenue. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-16	*Intersection #24. Hancock Street/Old Town Avenue/Interstate 5 Southbound Off-Ramps* – There are no planned improvements for this intersection in the Old Town Community Plan. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/Hancock Street intersection that effectively operates as the Interstate 5 southbound off-ramp with Old Town Avenue and Hancock Street. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-17	*Intersection #25. Witherby Street/Hancock Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. With the improvements proposed at this intersection, the Community Plan reports low LOS D results. However, the additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-18	*Intersection #26. Witherby Street/Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock

Type	Measure No.	Measure Description
		Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-19	*Intersection #27. Witherby Street/Tripoli Avenue* – Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-20	*Intersection #28. Hancock Street/Noell Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installing a traffic signal at this intersection would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-21	*Intersection #30. Washington Street/Hancock Street* – Per the Midway-Pacific Highway Community Plan, improvements are recommended at this intersection. The Community Plan recommends restriping the southbound approach to provide a second right-turn lane. However, the Community Plan states that the provision of the additional turn lane would eliminate heavily utilized street parking and therefore concludes impacts to this intersection would remain significant and unavoidable. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-22	*Intersection #31. Washington Street/Pacific Highway* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends participation by the airport in regional efforts to develop a long range transportation solution for accessing the airport, including: 1) participate in regional planning efforts led by SANDAG to determine transit connections between regional transit and the airport terminals, freeway connections along the Laurel Street corridor,

Type	Measure No.	Measure Description
		Intelligent Transportation Systems, and mobility hub improvements/strategies; and 2) participate in the implementation of improvements and strategies identified in the Airport Connectivity Analysis. However, the improvements were considered infeasible because parts of the mitigation measures are within the control of other agencies or jurisdictions. Therefore, the impact would remain significant and unavoidable. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-23	*Intersection #33. Pacific Highway/Sassafras Street* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a second eastbound through lane and restriping the southbound approach to provide a left-turn lane, three through lanes, and a right-turn lane to add capacity to the intersection, though the additional capacity continued to result in LOS E operations rendering the impact not fully mitigated. In addition, the plan recommends a Class IV Cycle Track be striped on Pacific Highway. The additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, the EIS recommends that the Proposed Action implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-24	*Intersection #34. Pacific Highway/Laurel Street* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the removal of a westbound through land and addition of a second eastbound left-turn lane, conversion of a southbound through lane into a second right-turn lane, and re-coordination of the signals along Laurel Street. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. Implementation of these improvements in the Airport Development Plan showed the intersection would continue to operate at poor LOS conditions rendering the impact not fully mitigated. The additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-25	*Intersection #35. Harbor Drive/Laurel Street* – Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a third eastbound left-turn lane and removal of an eastbound through lane to add capacity to the intersection, though the additional capacity continued to result in poor LOS operations rendering the impact not fully mitigated. The additional traffic added by the Proposed Action would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable.

Type	*Measure No.*	*Measure Description*
Potential Mitigation Measure	TRANS MIT-26	*Intersection #36. Pacific Highway/Sea World Drive* – There are no planned improvements in the Mission Bay Park Master Plan at this intersection. To improve operations at this intersection, any planned improvements should include an additional southbound left-turn lane from Sea World Drive to eastbound Pacific Highway. Implementation of this improvement would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-27	*Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street* – Per the Peninsula Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a five-lane Collector with a center left-turn lane with a LOS E capacity of 37,500 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 2,500 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-28	*Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-29	*Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-30	*Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-31	*Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

Type	Measure No.	Measure Description
Potential Mitigation Measure	TRANS MIT-32	*Street Segment #9. Taylor Street: Presidio Drive to Interstate 8 Eastbound Ramps* – There are no planned improvements in the Old Town Community Plan along this street segment. Additional lanes are needed on Taylor Street to increase the capacity along this roadway. However, due to the historic nature of the Old Town community, the Community Plan does not propose any road widening or significant capacity improvements. Additionally, there is not enough right-of-way available along this segment of Taylor Street to accommodate two additional through lanes and a center median while maintaining a Class II bicycle facility. Therefore, the impact would remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-33	*Street Segment #11. Pacific Highway: Sea World Drive to Taylor Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge would be infeasible. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-34	*Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard and Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue* – There are no planned improvements in the Midway-Pacific Highway Community Plan along these street segments. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations at intersections along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-35	*Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street and Street Segment #16. Pacific Highway: Witherby Street to Washington Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along these street segments. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a

Type	Measure No.	Measure Description
		new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-36	*Street Segment #17. Pacific Highway: Washington Street to Sassafras Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-37	*Street Segment #19. Morena Boulevard: Friars Road to Interstate 8* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Morena Boulevard to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge to four lanes would be infeasible. Therefore, the impact would remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-38	*Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street* – Per the Linda Vista Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Linda Vista Road currently functions as a four-lane Collector with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Road with a raised median with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-39	*Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Kurtz Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-40	*Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Sports Arena Boulevard currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-41	*Street Segment #26. Midway Drive: East Drive to Rosecrans Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional capacity is needed on Midway Drive to improve operations along this roadway. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity

Type	*Measure No.*	*Measure Description*
		of 30,000 ADT. Due to the lack of available right-of-way, widening the roadway to four-lane Major Arterial standards would be infeasible. Therefore, the impact would remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-42	*Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-43	*Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports LOS C results. However, the additional traffic added by the Proposed Action degrades roadway operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action implement the Community Plan improvements, where feasible, and the impact on this street segment will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-44	*Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Lytton Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with an LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. These improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-45	*Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a raised median with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-46	*Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 30,000 ADT of capacity over existing conditions. The Community Plan improvements are likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.

Type	Measure No.	Measure Description
Potential Mitigation Measure	TRANS MIT-47	*Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street* – Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports mid-LOS D results. However, the additional traffic added by the Proposed Action degrades roadway operations to significant levels. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-48	*Street Segment #33. Hancock Street: Witherby Street to Noell Street* – There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Hancock Street to increase the capacity along this roadway. Caltrans and SANDAG have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a HOV direct access ramp into the future on-site transit center to/from southbound Interstate 5; direct access ramps to OTC to/from Interstate 5, the reconstruction and widening of the Interstate 5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing OTC would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-49	*Street Segment #37. W. Washington Street: Hancock Street to University Avenue* – There are no planned improvements in the Uptown Community Plan along this street segment. Additional lanes are needed on Washington Street to increase the capacity along this roadway. Widening this section of Washington Street requires substantial grading and filling on both sides of the roadway. On the south side, a steep grade abuts the shoulder. On the north side, a drainage ditch lies adjacent to the roadway. The physical constraints of widening this segment of Washington Street would render this impact significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-50	*Freeway Segment #2. Interstate 5: Interstate 8 to Old Town Avenue; Freeway Segment #6. Interstate 5: Pacific Highway Viaduct to Laurel Street; Freeway Segment #7. Interstate 5: Laurel Street to Hawthorn Street; Freeway Segment #8. Interstate 5: Hawthorn Street to 1st Avenue; Freeway Segment #9. Interstate 5: 1st Avenue to 6th Avenue; Freeway Segment #10. Interstate 5: 6th Avenue to State Route-163* – The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along these

Type	*Measure No.*	*Measure Description*
		freeway segment. The improvements are anticipated to be completed by the Year 2050; however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-51	*Freeway Segment #12. Interstate 8: Interstate 5 to Morena Boulevard; Freeway Segment #13. Interstate 8: Morena Boulevard to Hotel Circle/Taylor Street; Freeway Segment #14. Interstate 8 Hotel Circle/Taylor Street to Hotel Circle; Freeway Segment #15. Interstate 8 Hotel Circle to State Route 163* – SANDAG and Caltrans jointly prepared an Interstate 8 Corridor Study (preliminary draft dated August 2016). This study analyzed transportation alternatives on Interstate 8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on Interstate 8 within the ROI that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South and Taylor Street interchange, among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U, and a new freeway overpass Interstate 8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable.
Potential Mitigation Measure	TRANS MIT-52	*Ramp Meter #1. Interstate 5 Northbound from Old Town Avenue/Moore Street* – Caltrans and SANDAG, as part of the Airport Connectivity Analysis, have prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing Interstate 5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. Additional capacity would be added to the interchange that would improve the queuing operations for vehicles destined to Interstate 5 northbound. Construction of the interchange improvements is likely to be implemented at a point during construction of any Proposed Action, and implementation would mitigate the impact to below a level of significance.
Potential Mitigation Measure	TRANS MIT-53	*Tier 1 Pedestrian Improvements* – The following improvements could be implemented as potential mitigation as outlined in any future lease, land transfer, or development agreement: • P-1: Pacific Highway, between Old Town Transit Center Driveway and Witherby Street – Upgrade the sidewalk classification on the east side of Pacific Highway, between Old Town Transit Center Driveway and Witherby Street to a corridor sidewalk classification for Proposed Action Alternatives 2 and 3 and district sidewalk classification for Proposed Action Alternatives 4 and 5. • P-2: Sports Arena Boulevard, between Rosecrans Street and Pacific Highway – Install missing sidewalks per connector sidewalk classification on both sides of Sports Arena Boulevard, between Rosecrans Street and Pacific Highway. • P-3: Midway Drive, between Rosecrans Street and Barnett Avenue – Install missing sidewalks per connector or corridor sidewalk classifications on the north side of Midway Drive, between Rosecrans Street and Barnett Avenue. • P-4: Witherby Street, between Pacific Highway and Hancock Street – Install missing sidewalks per connector sidewalk classification on the west side of Witherby Street, between Pacific Highway and Hancock Street. • P-5: Sports Arena Boulevard/Rosecrans Street Intersection – Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-15 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.

Type	Measure No.	Measure Description
		• P-6: Pacific Highway/Witherby Street Intersection – Conduct a feasibility assessment of the pedestrian improvements shown Figure 3-16 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented. • P-7: Midway Drive/Enterprise Street Intersection – Conduct a feasibility assessment of the pedestrian improvements described in Page 13 of the Midway-Pacific Impact Fee Study. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented. • P-8: Barnett Avenue/Midway Drive Intersection – Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-13 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
Potential Mitigation Measure	TRANS MIT-54	*Tier 2 Pedestrian Improvements* – The following improvements should be considered as potential mitigation as outlined in any future lease, land transfer, or development agreement: • P-9: Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street – Install missing sidewalks per connector sidewalk classification on both sides of Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street. • P-10: Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street – Install missing sidewalks per connector sidewalk classification on the south side of Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street. • P-11: Jessop Lane, between Enterprise Street and Barnett Avenue – Install missing sidewalks on both sides of Jessop Lane, between Enterprise Street and Barnett Avenue. • P-12: Kurtz Street, between Rosecrans Street and Pacific Highway – Install missing sidewalks per connector sidewalk classification on both sides of Kurtz Street, between Rosecrans Street and Pacific Highway. • P-13: Smith Street, between Pacific Highway and Kurtz Street – Install missing sidewalks on both sides of Smith Street, Between Pacific Highway and Kurtz Street. • P-14: Old Town Transit Center Driveway – Install missing sidewalks on south side of Old Town Transit Center Driveway off Pacific Highway.
Potential Mitigation Measure	TRANS MIT-55	*Prepare a Pedestrian Master Plan*. The plan would guide design and implementation of policies/programs to enhance access and mobility around and within the site for pedestrians of all ages and abilities.
Potential Mitigation Measure	TRANS MIT-56	*Tier 1 Bicycle Improvements* – The following improvements should be implemented as potential mitigation as outlined in any future lease, land transfer, or development agreement: • B-1: Pacific Highway, between Old Town Transit Center Driveway and Witherby Street – Provide Class IV bicycle facilities consistent with the Midway-Pacific Highway Community Plan. • B-2: Witherby Street, between Pacific Highway and Hancock Street – Provide Class II bicycle facilities consistent with the Midway-Pacific Highway Community Plan. • B-3: Sports Arena Boulevard, between Rosecrans Street and Pacific Highway – Provide Class II bicycle facilities consistent with the Midway-Pacific Highway Community Plan.

Type	*Measure No.*	*Measure Description*
		• B-4: Midway Drive, between Rosecrans Street and Barnett Avenue – Provide Class I bicycle facilities consistent with the Midway-Pacific Highway Community Plan. • B-5: Enterprise Street, between Pacific Highway and Midway Drive – Upgrade the bicycle classification from Class III to Class II.
Potential Mitigation Measure	TRANS MIT-57	*Tier 2 Bicycle Improvements* – The following improvements should be considered as potential mitigation as outlined in any future lease, land transfer, or development agreement: • B-6: Taylor Street, between Kurtz Street and Presidio Drive – Provide Class II bicycle facilities consistent with the Midway-Pacific Highway Community Plan and the Old Town Community Plan. • B-7: Juan Street, between Taylor Street and Witherby Street – Provide Class III bicycle facilities consistent with the Old Town Community Plan. • B-8: Barnett Avenue, between Henderson Avenue and Midway Drive – Provide a Class II bicycle facility (south side only) consistent with the Midway-Pacific Highway Community Plan. • B-9: Hancock Street, between Old Town Avenue to Noell Street – Provide a Class II bicycle facility consistent with the Midway-Pacific Highway Community Plan. • B-10: Old Town Avenue, between Hancock Street and San Diego Avenue – Provide a Class II bicycle facility consistent with the Midway-Pacific Highway Community Plan and Old Town Community Plan. • B-11: Sports Arena Boulevard, between Kemper Street and 1,050 feet east of Kemper Street – Replace the existing the Class III bicycle facility on the south side of Sport Arena Boulevard to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan. • B-12: Rosecrans Street, between Madrid Street and Midway Drive – Replace the existing the Class III bicycle facility on the west side of Rosecrans Street to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan.
Potential Mitigation Measure	TRANS MIT-58	*Prepare a Bicycle Master Plan for the Proposed Action Alternatives*. The plan would guide design and implementation of policies/programs to enhance access and mobility around and within the site for bicyclist of all ages and abilities.
Potential Mitigation Measure	CUL MIT-1	The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. The Navy is in consultation with SHPO and other consulting parties and will identify appropriate mitigation measures prior to the Final EIS.
Potential Mitigation Measure	NOI MIT-1	Construction noise would be mitigated as much as practical by following all city ordinance on construction hours and ensuring appropriate noise reducing equipment (i.e., mufflers) are functioning properly.
Potential Mitigation Measure	NOI MIT-2	Construction of noise sensitive facilities, namely residential, would be designed to meet city-specified interior noise level targets through the use of building materials and appropriate construction methods.

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4 Cumulative Impacts

4.1 Introduction

As defined by CEQ regulations, a cumulative impact is "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions" (40 CFR part 1508.7).

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR part 1508.7). The CEQ and USEPA have published guidance addressing implementation of cumulative impact analyses—Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (CEQ, 2005) and Consideration of Cumulative Impacts in EPA Review of NEPA Documents (USEPA, 1999).[12] CEQ guidance entitled Considering Cumulative Impacts Under NEPA (1997b) states that cumulative impact analyses should "…determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts…[and]…focus on truly meaningful impacts."

This chapter defines the methodology used to assess potential cumulative impacts; describes past, present, and reasonably foreseeable actions that could contribute to cumulative impacts; and analyzes the significance of any potential cumulative effects that could result from implementation of the Proposed Action Alternatives in conjunction with those other relevant actions.

4.2 Approach to Analysis

4.2.1 Overview

The cumulative impacts of the Proposed Action Alternatives were evaluated using a three-step process:

1. The Navy used the following sources to identify other past, present, and reasonably foreseeable actions:
    a. input from the public during the OTC EIS project public scoping process
    b. regional agencies: Naval Base Point Loma, MCRD San Diego, SANDAG, Port of San Diego, City of San Diego, County of San Diego
    c. City of San Diego land development permit applications
    d. media publications
    e. completed NEPA and CEQA analyses

[12] As noted in Chapter 1, the Navy did not apply the revised CEQ NEPA regulations that took effect in September 2020 because preparation of this EIS began before the new regulations took effect. Thus, this chapter provides a complete cumulative impact analysis reflective of the applicable regulations and guidance documents that were in effect when preparation of this EIS was initiated.

2. The analysis identified and summarized the effects of those past, present, and reasonably foreseeable actions on each resource area analyzed in Chapter 3 of this EIS.
3. The analysis assessed the potential incremental effects of the Proposed Action Alternatives to determine if a significant cumulative effect would occur when the effects of the action alternative were added to the effects of other past, present, and reasonably foreseeable actions in the same geographic area.

Cumulative impacts are most likely to arise when a relationship or synergism exists between a proposed action alternative and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the OTC site would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis addressed the following three fundamental questions:

1. Does a relationship exist such that the resource area(s) impacted by a proposed action might interact with past, present, or reasonably foreseeable actions?
2. If an interaction exists, would the Proposed Action's impact to the resource area(s) be amplified by the impacts of the cumulative action?
3. If an effect exists, then does the impact assessment reveal any potentially significant impacts to the resource area(s) not identified when the proposed action is considered alone?

The following graphics visually demonstrate the application of these three fundamental questions, using land use as the resource area example. Corresponding with question 1, Figure 4.2-1 depicts a proposed action consisting of changing the land use designation and constructing a new building in the middle of a large military installation. Such an action would have a low potential to interact with future construction projects at off-installation locations in a large urban area. In this example, there would be no relationship between the military's proposed action and the other actions with respect to land use because the activities are separated in space (and potentially in time). Thus, there would be a low potential for cumulative impacts and no further analysis would be necessary.

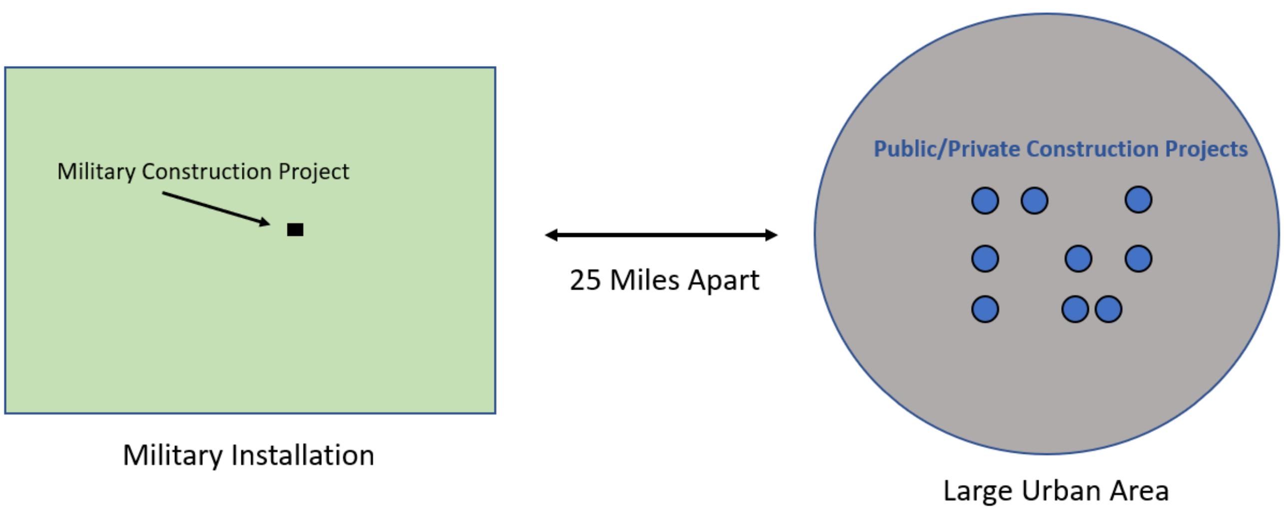


Figure 4.2-1 Actions Dispersed in Space Demonstrating No Interaction

Corresponding with question 2, Figure 4.2-2 depicts an example military construction project in an urban setting, resulting in an impact to land use. Shown too are several other construction projects in the region that would also result in land use impacts. In this example, because the other projects would be located in the same area (and potentially overlap in time) there is an interaction and the impacts from both the proposed action and these other projects could have a cumulative effect on land use that exceeds their individual impacts. In this example, these other projects would be considered to be "cumulative actions" for the purpose of cumulative impact analysis.

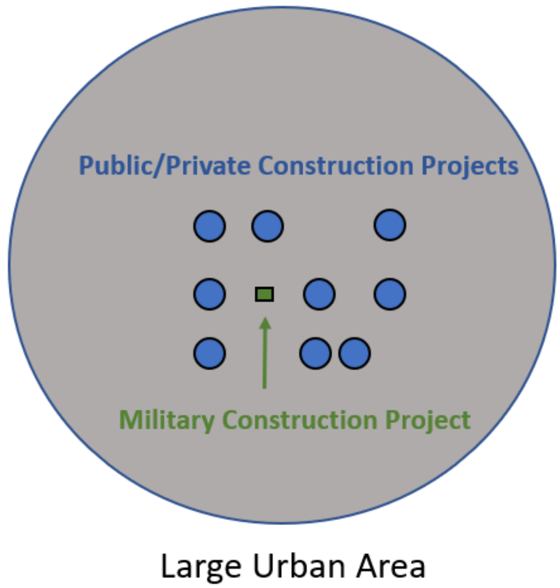


Figure 4.2-2 Interacting Actions with Potential to Impact the Same Resource Area in Space and Time

Finally, corresponding with question 3, as shown in Figure 4.2-3, the combination of past, present, and reasonably foreseeable actions over time demonstrates the potential for significant cumulative impacts to land use – despite the fact that each of the individual actions alone would not result in significant impacts. Figure 4.2-3 presents the core basis for cumulative effects analysis – even if an action by itself would not result in significant impacts, it could, in combination with other actions, result in a significant cumulative impact. While Figure 4.2-3 illustrates the case where additive effects of several individually non-significant actions would result in a cumulatively significant impact, significant cumulative impacts can also result if one action by itself would result in a significant impact. As will be demonstrated in several of the following resource area analyses, this latter case is more common in this EIS.

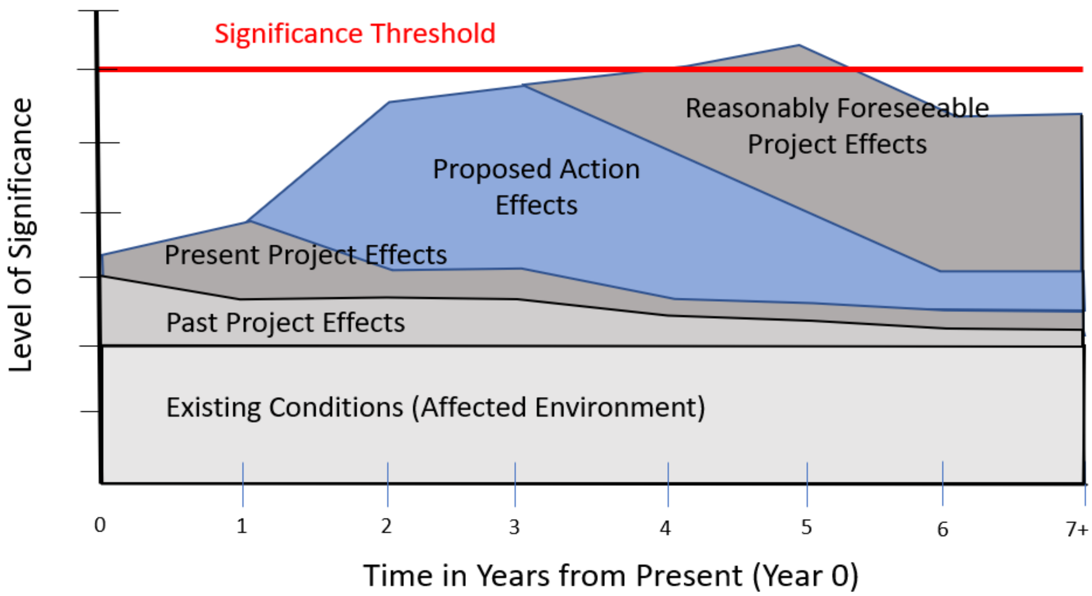


Figure 4.2-3 Additive Cumulative Impacts over Time Demonstrating Potential for Significant Impact

4.2.2 Scope of Analysis

The scope of this cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. Beyond determining the geographic scope and time frame for cumulative actions interrelated to the Proposed Action Alternatives, CEQ regulations state that the analysis of cumulative impacts approximately employs the measure of "reasonably foreseeable" in determining whether to include or exclude future actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies formed the primary sources of information regarding reasonably foreseeable actions.

4.2.3 Identify the Appropriate Level of Analysis for Each Resource

The level of analysis to determine the cumulative impacts to each resource area is commensurate with the intensity, or magnitude of the impacts identified in the environmental consequence sections in Chapter 3. In using this approach, the Navy considered all connected and similar actions that could contribute to cumulative effects, with a focus on identifying those effects that could potentially result in significant cumulative impacts. The rationale for the level of analysis applied to each resource area is described in the specific resource area discussions in Section 4.4.

4.2.4 Define Geographic Boundaries and Time Frame for Analysis

4.2.4.1 Geographic Extent

In general, while the resource area geographic boundaries, or area of geographic extent in which impacts may occur, generally correspond to those previously identified for the respective resource areas in Chapter 3, a specific geographic extent is defined for each resource area in Section 4.4 of this chapter.

Broadly speaking, the five Proposed Action Alternatives span three different levels of potential development and as such, three corresponding geographic extents, with some exceptions. The geographic extents considered generally correspond to City of San Diego-defined Community Planning Areas (Figure 4.2-4). The geographic extent increases for each grouping of Proposed Action Alternatives and is as follows and as summarized in Table 4.2-1:

- **Alternative 1:** Because this alternative focuses on recapitalizing the existing OTC property, the geographic extent for cumulative actions is OTC and adjacent areas (generally within a half-mile radius) located within the Midway-Pacific Highway Community Planning Area.
- **Alternatives 2 and 3:** Because these alternatives consider a public-private development agreement with mixed-use development at OTC, the geographic extent for cumulative actions generally consists of OTC and the surrounding region (as defined by the three overlapping and adjacent community planning areas). Although Alternatives 2 and 3 propose slightly different densities of development, because they are similar when viewed in a cumulative impacts context, this cumulative analysis groups them together.
- **Alternatives 4 and 5:** These alternatives include the consolidation of a transit center on OTC, a transportation-related element specific to only these alternatives. Thus, the geographic extent for cumulative actions consists of the region considered under Alternatives 2 and 3 with the addition of transportation-related cumulative actions associated with regional transportation plans, programs, and projects. Though Alternatives 4 and 5 propose slightly different densities of development, because they are similar when viewed in a cumulative impacts context, this cumulative analysis groups them together.

Table 4.2-1 Geographic Extent by Proposed Action Alternatives

Action Alternative(s)	*OTC and Adjacent Areas within Midway-Pacific Highway Community Planning Area*	*Midway-Pacific Highway, Old Town, and Uptown Community Planning Areas*	*Regional Mass Transportation Plans/Programs*
1	X	-	-
2 and 3	X	X	-
4 and 5	X	X	X

Because the boundaries for evaluating cumulative impacts should be expanded to the point at which the resource is no longer affected significantly, or the effects are no longer of interest to affected parties, exceptions to the preceding general geographic extent definitions include such resources as air quality, transportation, cultural resources, and socioeconomics – resource areas that can have a geographic extent that reach beyond the scope or immediate area of impact associated with the Proposed Action Alternatives. These extents are defined in their respective sections later in this chapter.

4.2.4.2 Timeframe for Analysis

Determining the time frame for the cumulative impacts analysis requires estimating the length of time the impacts of a proposed action would last and considering the specific resource in terms of its history of degradation (CEQ, 1997b).

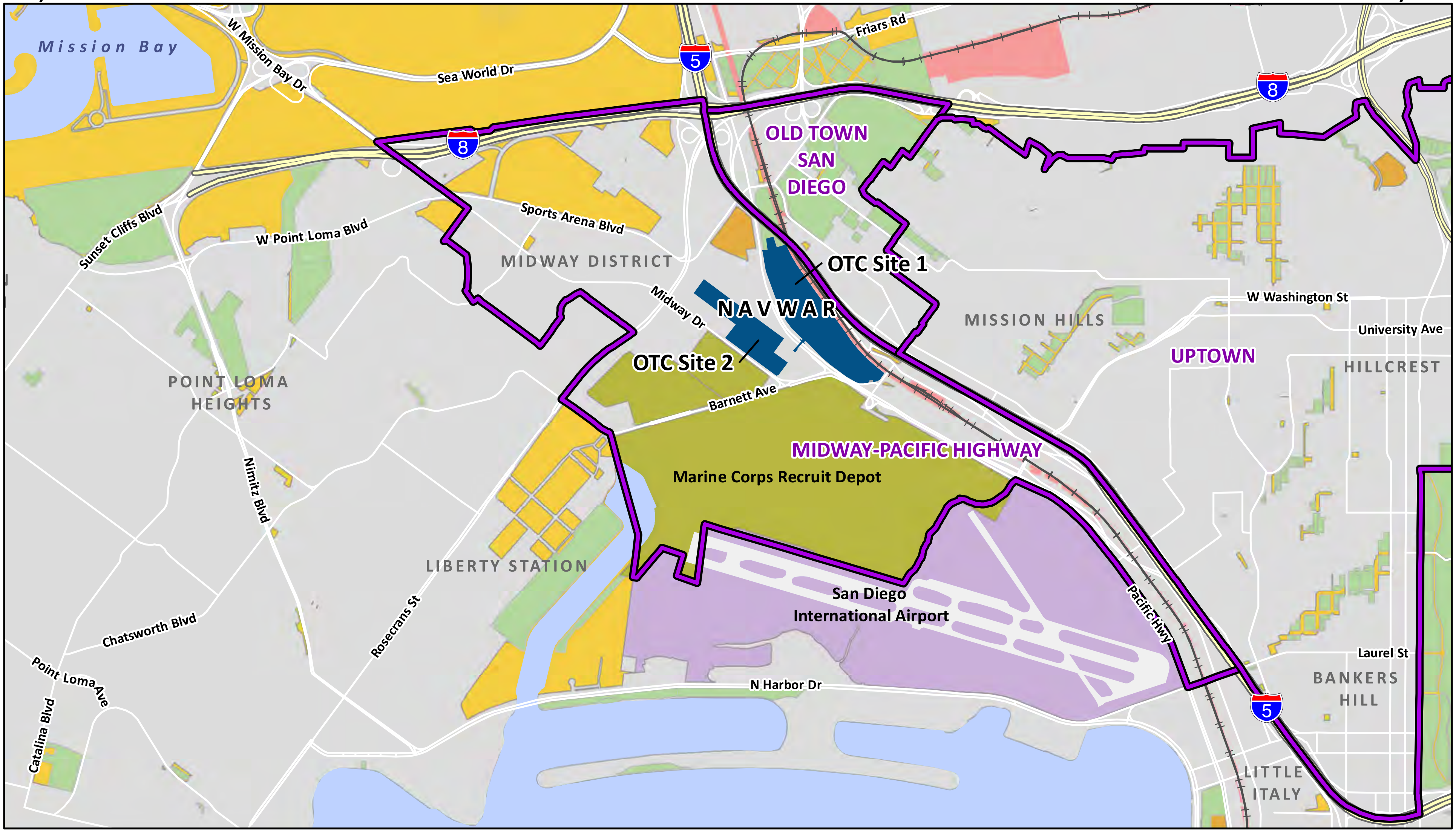
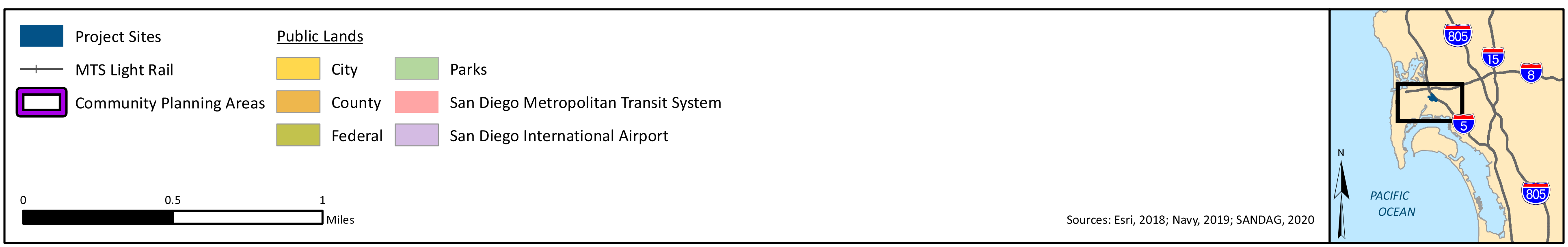


Figure 4.2-4. City of San Diego Community Planning Areas in the Vicinity of the Project Sites



For past actions, the cumulative impacts analysis only considers those actions or activities that have ongoing impacts. While implementation of the Proposed Action Alternatives would begin in approximately 2021, depending on the action alternative implemented, construction activities could continue in phases until the year 2050, and then be implemented indefinitely thereafter (i.e., Navy, commercial, and/or transportation activities are operational following construction). Thus, the cumulative impacts timeframe for analysis spans existing conditions, past actions (2017-2020), present actions (2020+), and future actions (2023-2050+).

While the cumulative impacts analysis is not limited by a specific time frame, available information, uncertainties, and other practical constraints limit the ability to analyze cumulative impacts into the indefinite future. Future actions that are speculative or not probable are not considered, as they are not reasonably foreseeable.

The Navy defined what constituted past, present, or reasonably foreseeable actions using the following criteria:

- **Past** actions are those completed within the last 3 years (from March 1, 2017 to March 1, 2020). Three years was used because this timeframe is long enough to capture recent changes that may not be already reflected in existing condition documentation (e.g., annual air quality reports or multi-year planning documents).
- **Present** actions are currently under construction/implementation (as of March 1, 2020).
- **Reasonably Foreseeable** actions have publicly available planning or permit application documentation, are currently undergoing environmental review, or have been approved for future implementation by the appropriate lead agency.

4.2.5 Describe Current Resource Conditions and Trends

The affected environment section of each resource area (see Chapter 3 of this EIS) describes current resource conditions and trends and discusses how past and present human activities influence each resource. The majority of aggregate impacts of past actions are reflected in the baseline information presented in the respective resource area section in Chapter 3.

4.2.6 Identify Potential Impacts of Action Alternatives that Might Contribute to Cumulative Impacts

The impacts of the action alternatives, presented in the environmental consequences section of each resource area (see Chapter 3), were used to identify impacts that are relevant to the cumulative impact analysis. Key factors considered included the status of the resource; sensitivity of the resource; and the intensity, duration, and spatial extent of the potential impacts from implementation of the Proposed Action Alternatives. In general, potential long-term and widespread impacts were considered more likely to contribute to cumulative impacts than potential short-term and localized impacts.

4.2.7 Identify Other Actions and Environmental Considerations that Affect Each Resource

The Navy considered the following factors when identifying other actions to be included in the cumulative impacts analysis:

- Whether the action is likely or probable (i.e., reasonably foreseeable), rather than merely possible or speculative.
- The timing and location of the other action in relation to OTC.
- Whether the other action and action alternative(s) would affect the same resources.

- The current conditions, trends, and vulnerability of resources affected by the other action.
- The duration and intensity of the impacts of the other action, and whether the impacts have been identified previously in other environmental planning documentation as an impact concern.

The Navy contacted the following entities and used the EIS scoping process to develop the list of potential cumulative actions considered in this EIS:

- Naval Base Point Loma (regarding planned actions on OTC)
- MCRD San Diego
- City of San Diego
- County of San Diego
- SANDAG
- Port of San Diego
- others (San Diego International Airport, developers, etc.)
- actions identified through the scoping and public review process

Upon receipt of the information from the aforementioned sources, the Navy then reviewed the provided list of actions and determined if the action merited being carried forward for cumulative impacts analysis. Planned actions that the Navy identified during their review that did not satisfy the criteria to be considered reasonably foreseeable for cumulative analysis are not included in this EIS. Any action that is still in the initial stages of planning, has no reasonably foreseeable actions associated with it, and does not have a timeline for activities is considered too speculative to be cumulatively analyzed at this time.

4.2.8 Analyze Potential Cumulative Impacts

The incremental impacts of the Proposed Action Alternatives were added to the combined potential impacts of the identified past, present, and reasonably foreseeable actions to identify the cumulative impacts that would result. The Navy conducted a qualitative analysis in most cases; however, when available, quantitative data were used. The analysis is presented by each group of Proposed Action Alternatives (i.e., Alternative 1, Alternatives 2 and 3, and Alternatives 4 and 5).

4.3 Past, Present, and Reasonably Foreseeable Actions

This section identifies the relevant cumulative actions that the Navy considered in this cumulative impacts analysis, and also summarizes notable regional plans and programs that merit specific discussion due to their relationship to the Proposed Action Alternatives.

4.3.1 Cumulative Actions

This section identifies past, present, and reasonably foreseeable actions within the geographic extent associated with each action alternative. In determining which actions to include in the cumulative impacts analysis, a determination was made regarding each past, present, or reasonably foreseeable action, as described in Section 4.2.

Actions included in this cumulative impacts analysis are summarized in Table 4.3-1. This list of identified actions generally includes projects, plans, and programs within the following categories: community development, residential construction, transportation improvements (car, train, marine, and airplane), infrastructure improvements, land and realty development/redevelopment, regular military operations and maintenance actions, military training operations, and military resource management.

As shown in Table 4.3-2, the Navy evaluated each of the identified cumulative actions and determined which actions fall within the geographic effect region for each action alternative(s), and which resource areas were considered when evaluating the cumulative action in the context of the Proposed Action Alternatives. This table serves as a guide for identifying which other actions are relevant to each of the action alternatives and resource areas. Figure 4.3-1 depicts the locations of those actions identified in Table 4.3-2 as having the greatest likelihood to generate potential cumulative impacts when added to Alternative 1. Figure 4.3-2 depicts the locations of those actions identified in Table 4.3-2 as having the greatest likelihood to generate potential cumulative impacts when added to Alternatives 2 and 3. Figure 4.3-3 depicts the locations of those actions identified in Table 4.3-2 as having the greatest likelihood to generate potential cumulative impacts when added to Alternatives 4 and 5.

As described in Chapter 2, *Proposed Action and Alternatives*, some NAVWAR functions would be relocated from OTC to other locations within the San Diego region to reduce the Navy footprint at OTC under Alternatives 2 through 5. The Navy anticipates accommodating the open storage/laydown and warehouse functions into existing or new facilities in the San Diego region; however, the Navy has not identified a proposed location or locations at this time. Therefore, the potential relocation of NAVWAR warehouse functions cannot be presently analyzed and the Navy has not included this potential future action in this cumulative impact analysis. Should the Navy identify a potential location(s) in the future, the relocation would then be ready for analysis. Accordingly, the Navy would then comply with all relevant environmental planning and compliance requirements at that time, to include considering this EIS in the cumulative impacts analysis, as warranted.

4.3.2 Notable Planning Documentation

The following groups of plans are notable due to their relevancy to the Proposed Action Alternatives and influence on past, present, and reasonably foreseeable actions within the geographic scope of the cumulative impacts analysis. For more detail about these highlighted plans, see Section 3.4, *Land Use*.

4.3.2.1 Military Plans

The three military plans that are most relevant to the Proposed Action Alternatives are the Naval Base Point Loma OTC Area Development Plan, the Draft Naval Base Point Loma OTC Recapitalization Plan, and the Naval Air Station North Island AICUZ Update.

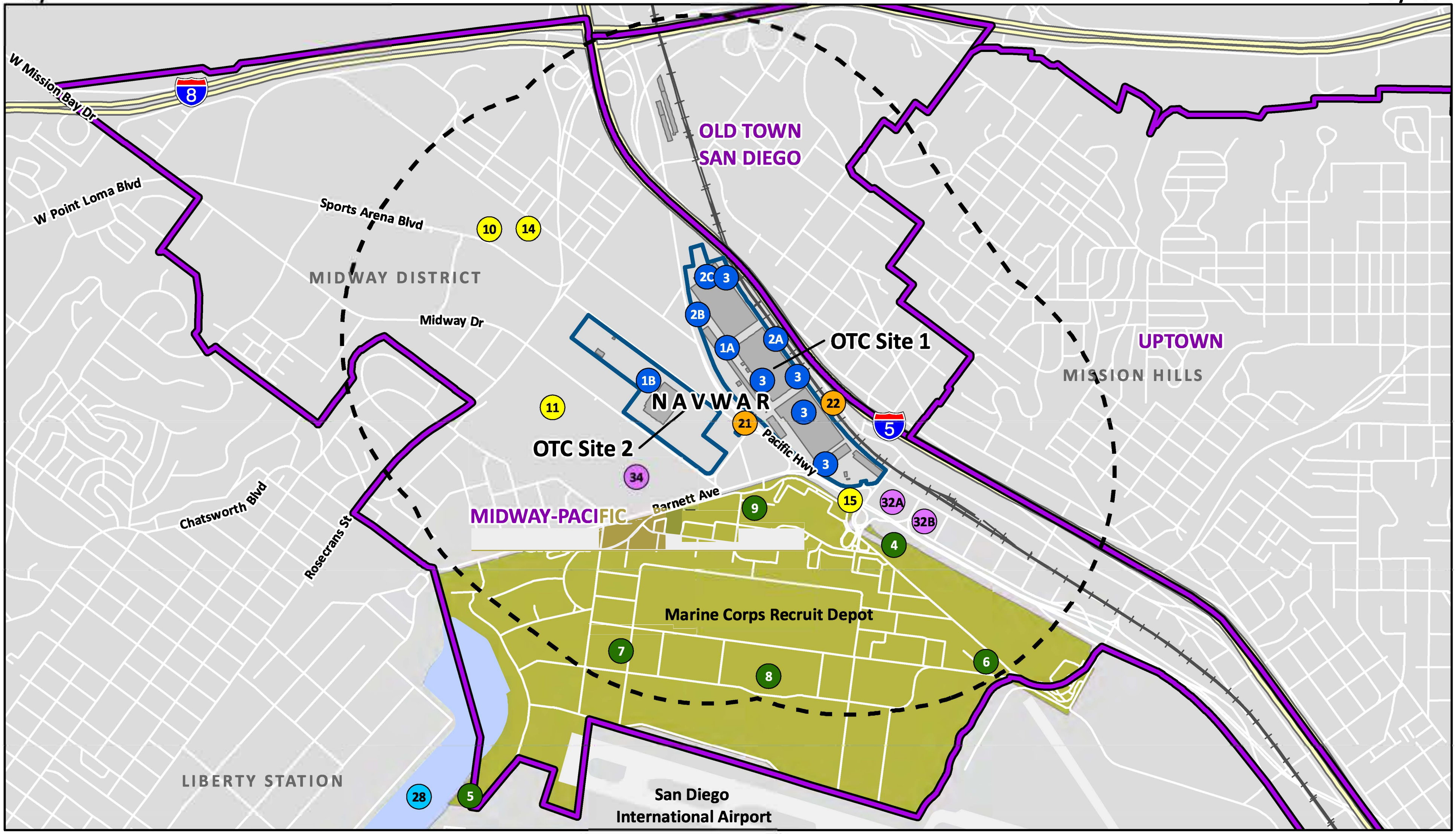
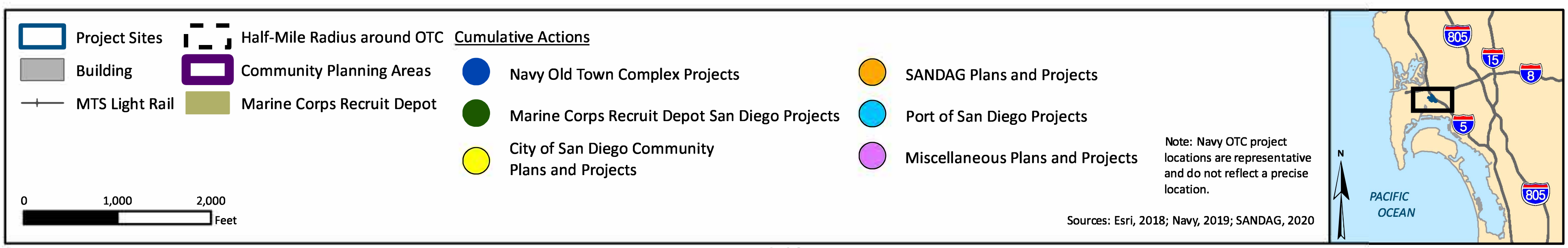


Figure 4.3-1. Cumulative Actions Considered under Alternative 1



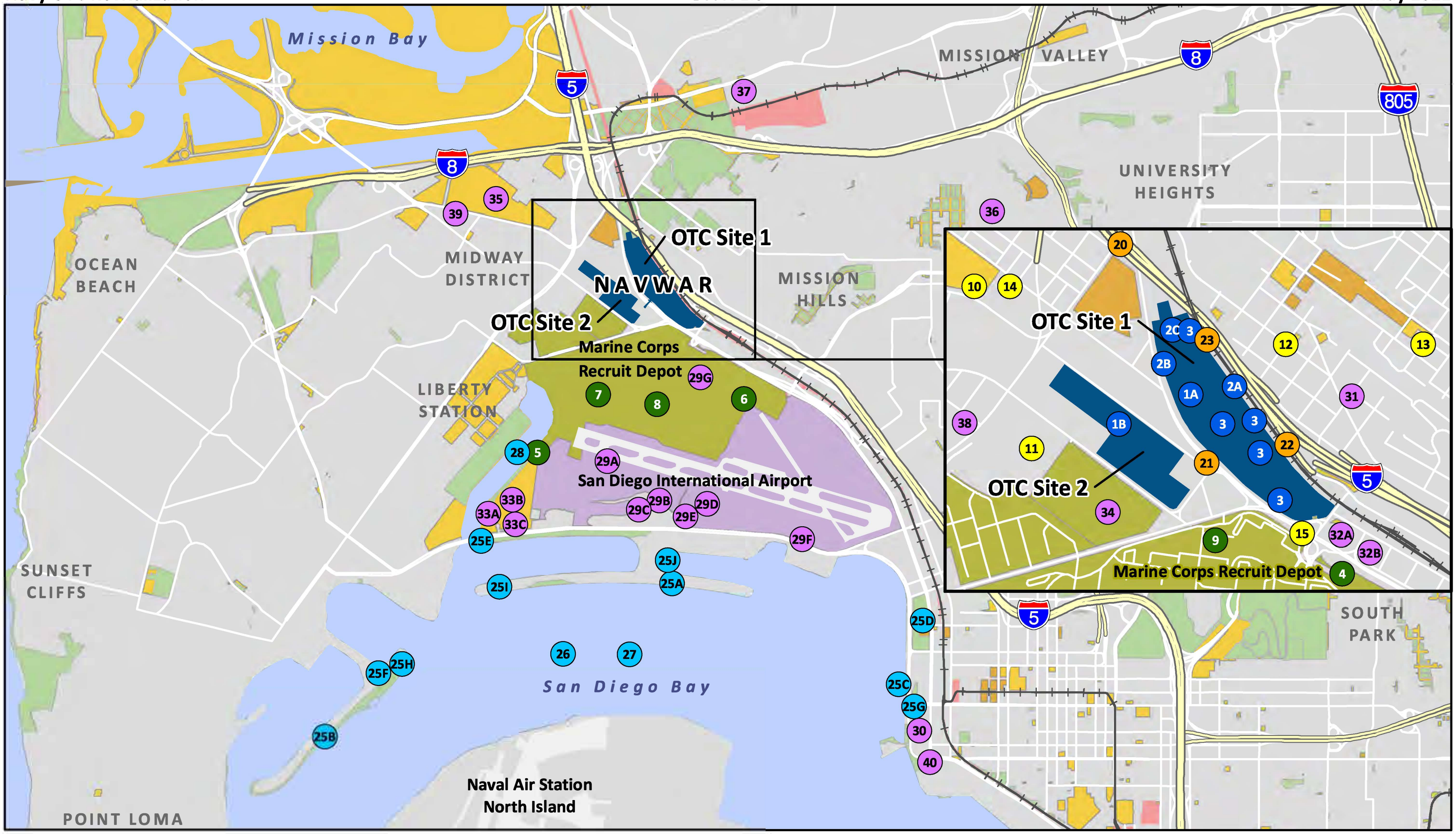
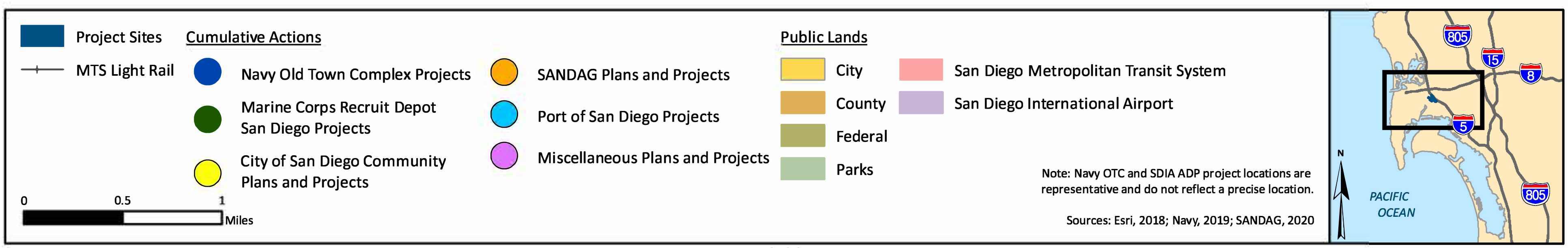


Figure 4.3-2. Cumulative Actions Considered under Alternative 2 and 3



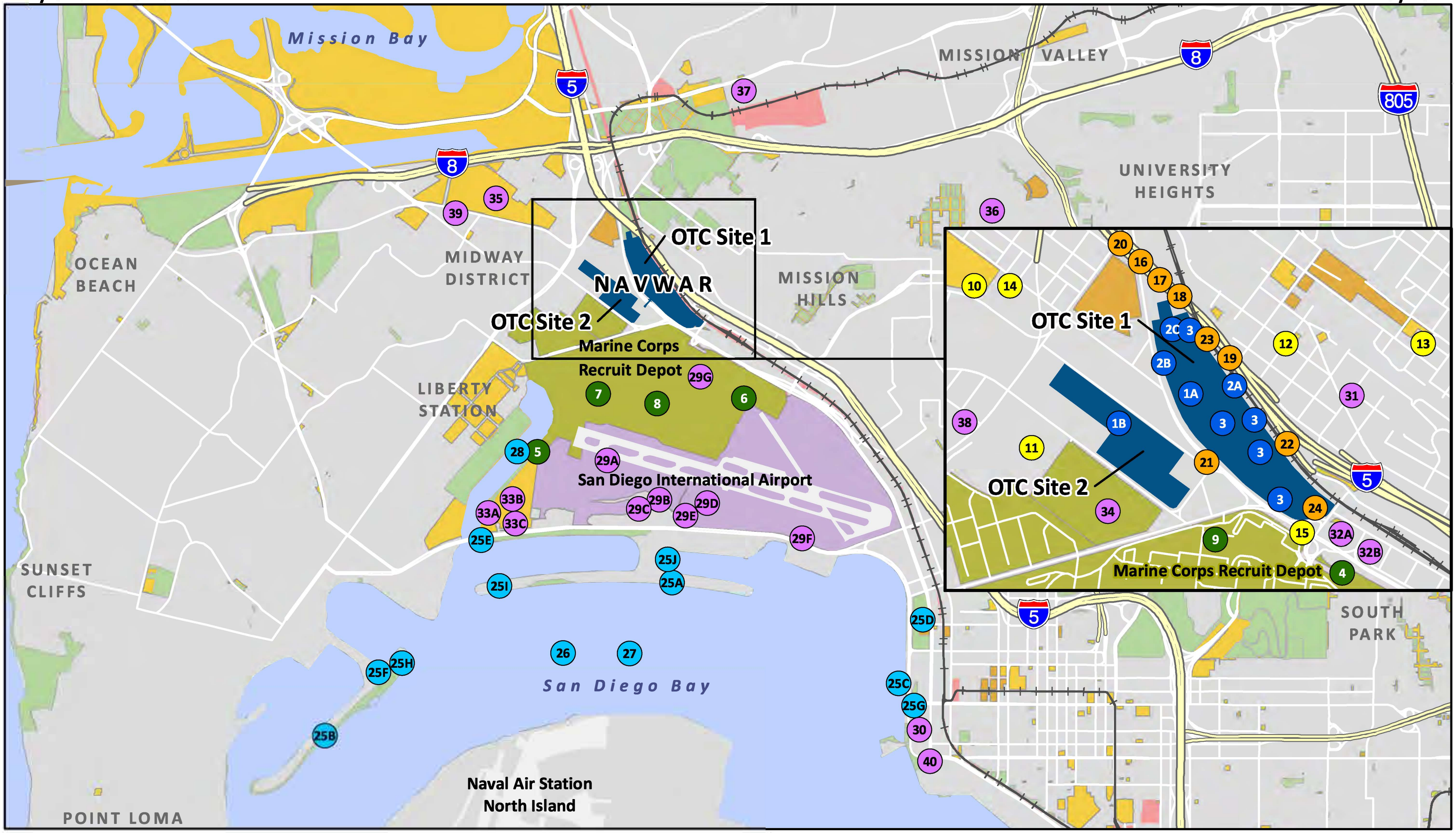


Figure 4.3-3. Cumulative Actions Considered under Alternative 4 and 5

Project Sites

MTS Light Rail

Cumulative Actions

- Navy Old Town Complex Projects
- Marine Corps Recruit Depot San Diego Projects
- City of San Diego Community Plans and Projects
- SANDAG Plans and Projects
- Port of San Diego Projects
- Miscellaneous Plans and Projects

Public Lands

- City
- County
- Federal
- Parks
- San Diego Metropolitan Transit System
- San Diego International Airport

0 0.5 1 Miles

Notes: 1) This figure presents the same projects as shown on Figure 4.3-3, with the inclusion of regional transportation plans/program (#'s 16 – 19), and the Automated People Mover (#24).
2) Navy OTC and SDIA ADP project locations are representative and do not reflect a precise location.

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020

Table 4.3-1 NAVWAR OTC EIS Cumulative Action Descriptions

Action Number	*Cumulative Action Name*	*Action Proponent*	*Summary of Action*	*Action Location(s)*	*Construction/ Implementation Timeline*	*Past, Present or Reasonably Foreseeable*
1A-1B	Miscellaneous Facility Operations and Maintenance Actions	Naval Base Point Loma	Naval Base Point Loma identified 54 repair, renovation, maintenance, minor construction, and replacement actions at OTC Site 1 and OTC Site 2 (Naval Base Point Loma, 2020). All of these actions are considered minor and are related to operations and maintenance of the facility. None of the actions would change operations, the facility footprint, or personnel levels. The actions include the following: OTC Site 1 (represented by "1A" on Figures) – 31 Actions • Construct a 22,000 square foot Pre-Engineered Building inside Building OTC 1 • Renovate HVAC • Install New Emergency Generator • Replace three Heating Boilers • Replace Windows • Repair Fire Main Gauge Line • Adjust Parking and Remove Guard Rail • Drywall Repair • Renovate Secure Rooms • Repair Sinkhole • Repair Spalling Concrete • Micro Mart Buildout • Implement Air Quality Improvements (2 actions) • Abate Lead Paint at Columns and Walls • Increase Containment Berm Size • Replace Metal Overhang • Replace Water Lines • Renovate Office • Renovate/Repair Restrooms (2 actions) • Modernize/Renovate Admin Spaces (3 actions) • Install Fire Suppression System • Expand NAVWAR Secure Room • Resurface Building Interior • Stabilize Roof Paint • Replace Chillers and Cooling Towers • Decommission Fuel Oil Tank • Install Vertical Reciprocating Lifts OTC Site 2 (represented by a "1B" on Figures) – 23 Actions: • Establish Satellite Hazardous Waste Storage Area • Install Lights • Convert Rooms to Secured Spaces (2 actions) • Install Vinyl Planking • Upgrade Lab Space • Replace Emergency Lighting • Increase Power Supply to Server • Install Sunshade Sails • Repair East Side Fire Riser • Upgrade Power • Soundproof Multiple Offices • Renovate Rooms (3 actions) • Close in Conference Room	OTC Site 1 and OTC Site 2	2017-2022+	Past: 30 actions Present: 13 actions Reasonably Foreseeable: 11 actions

Action Number	Cumulative Action Name	Action Proponent	Summary of Action	Action Location(s)	Construction/ Implementation Timeline	Past, Present or Reasonably Foreseeable
			• Replace Exterior Window Covers • Repair HVAC and Electrical • Renovate Multiple Kitchenettes • Restore Lab Floor • Demolish and Replace Cooling Towers • Roof Repairs (2 actions)			
2A-2C	Active IR – Sites 1, 10, & 11	Naval Base Point Loma	The Navy is currently conducting risk/site evaluation for Site 1 to determine if site closure is feasible. Further investigation may be necessary since previous investigation was based on industrial criteria. Since 2014, the Navy has been conducting in-situ groundwater remediation and implemented a soil vapor extraction system for Sites 10 and 11.	OTC Site 1	Ongoing	Present
3	Preliminary Assessment of Potential Contamination	Naval Base Point Loma	The Navy is currently investigating potential contamination related to chemicals known as PFAS. Five sites at the OTC facility were identified as having the potential to be impacted by substances known to contain PFAS. These five sites were recommended for further investigation under the Site Investigation phase of the Comprehensive Environmental Response, Compensation, and Liability Act process.	OTC Site 1	Ongoing	Reasonably Foreseeable
4	Marine Corps Community Services Car Wash	MCRD San Diego	Construct an automatic car wash with vacuum bays (MCRD, 2020).	MCRD San Diego campus	Ongoing through 2020	Present
5	Demolition of Cogeneration Plant	MCRD San Diego	Demolish decentralized cogeneration plant (MCRD, 2020).	MCRD San Diego campus	Ongoing through 2020	Present
6	Construction of Provost Marshall Office	MCRD San Diego	Construct a one-story Provost Marshal's Office facility with operational garage (MCRD, 2020).	MCRD San Diego campus	In planning process	Reasonably Foreseeable
7	Consolidation of Medical/Dental	MCRD San Diego	Consolidate medical and dental facilities into a two-story building (MCRD, 2020).	MCRD San Diego campus	In design	Reasonably Foreseeable
8	Replacement of Recruit Mess Hall	MCRD San Diego	Construct new one-story Mess Hall and demo existing (MCRD, 2020).	MCRD San Diego campus	In design	Reasonably Foreseeable
9	Construct Replacement Switching Station	MCRD San Diego	Construct replacement switching station (MCRD, 2020).	MCRD San Diego campus	In planning process	Reasonably Foreseeable
10	City of San Diego General Plan and EIR	City of San Diego	The General Plan (City of San Diego, 2008b) is the foundation upon which all land use decisions in the City are based. It expresses a citywide vision and provides a comprehensive policy framework for how the City of San Diego should grow and develop, provide public services, and maintain the qualities that define the City of San Diego. The City of San Diego's General Plan was comprehensively updated in 2008 and sets out a long range (20+ year) plan with actions that have the potential to effect numerous resource areas.	Citywide	Ongoing through 2030+	Past, Present, and Reasonably Foreseeable
11	Midway-Pacific Highway Community Plan Update and EIR	City of San Diego	Updated in 2018, this plan (City of San Diego, 2018a) establishes a vision with policies to guide the future growth and development within Midway - Pacific Highway, through 2035, consistent with the General Plan and provides the basis for plan implementation including zoning, development regulations, and a public facilities financing plan. The plan identifies actions that would meet these expressed purposes. Of note, the plan presents a potential future development of 10,155 additional residential units, 4,370 jobs, 23,660 people, and 300,000 square feet of non-residential development. The EIR (City of San Diego, 2018c) analyzed the community plan.	Surrounds OTC Site 1 and Site 2	2020+	Reasonably Foreseeable
12	Old Town Community Plan and EIR	City of San Diego	This plan (City of San Diego, 2018b) provides detailed policy direction to implement the General Plan with respect to the distribution and arrangement of land uses (public and private), the local street and transit network, prioritization and provision of public facilities, community-wide and site-specific architectural and urban design guidelines, and recommendations to preserve and enhance natural open space and historic and cultural resources within the Old Town community. The plan presents a potential future development of 931 additional residential units, 230 jobs, and 1,598 people. The EIR (City of San Diego, 2018d) analyzes the community plan.	East of OTC Site 1	2021+	Reasonably Foreseeable
13	Uptown Community Plan Update and EIR	City of San Diego	The 2019 update (City of San Diego, 2019b) to the 1988 Uptown Community Plan provides detailed policy direction to implement the General Plan with respect to the distribution and arrangement of land uses, the local street and transit network, the prioritization of public facilities, community and site-specific urban design guidelines, and recommendations to preserve and enhance natural open space and historic and cultural resources with the Uptown community through 2035. The plan presents a potential future development of 11,600 additional residential units and 22,120 people. The EIR (City of San Diego, 2016c) analyzed the community plan.	East of OTC Site 1	2021+	Reasonably Foreseeable

Action Number	*Cumulative Action Name*	*Action Proponent*	*Summary of Action*	*Action Location(s)*	*Construction/ Implementation Timeline*	*Past, Present or Reasonably Foreseeable*
14	Climate Action Plan	City of San Diego	The City of San Diego adopted a Climate Action Plan on December 15, 2015 and amended it in 2016 (City of San Diego, 2016a), with the goal of creating a cleaner San Diego for future generations. The Climate Action Plan calls for eliminating half of all GHG emissions in the City of San Diego and aims for all electricity used in the City of San Diego to be from renewable sources by 2035. The City of San Diego's Climate Action Plan is intended to help achieve the GHG emissions reduction targets set forth by the State of California.	Citywide	Ongoing	Present
15	Pacific Highway Cycle Tracks	City of San Diego	As part of the City of San Diego's Bicycle Master Plan (City of San Diego, 2013b), this action would upgrade bicycle facilities along a 2+ mile stretch. This is one project listed in the city's overall Bicycle Master Plan.	From Ocean Beach Bike Path to Washington Street and along Pacific Highway from Washington Street to Sassafras Street	Currently unknown	Reasonably Foreseeable
16	2050 RTP and EIR	SANDAG	SANDAG adopted the 2050 RTP and Sustainable Communities Strategy in 2011 (SANDAG, 2011a). The RTP is a balanced vision for the evolution of the region's transportation system over the next 40 years. Many of the capital projects outlined in the RTP are now in development. Along with the 2050 RTP, the Board adopted the Sustainable Communities Strategy. The Sustainable Communities Strategy details how the region will reduce GHG emissions to state-mandated levels over time. The EIS evaluated the impacts from implementation of the Plan (SANDAG, 2011b).	San Diego Region	2012+-2052+	Past, Present, and Reasonably Foreseeable
17	Regional Transportation Improvement Program	SANDAG	Adopted in 2018 (SANDAG, 2018), the Regional Transportation Improvement Program is a multi-billion-dollar, multi-year program of proposed projects for major transportation projects in the San Diego Region. The program covers 5 fiscal years and incrementally implements San Diego Forward: The Regional Plan, the long range transportation plan for the San Diego region. Several of the following SANDAG projects are part of the Regional Transportation Improvement Program, as indicated.	San Diego Region	2020-2025	Present and Reasonably Foreseeable
18	San Diego Forward: The Regional Plan	SANDAG	This plan (SANDAG, 2015) serves as a blueprint for how the region will grow, and how SANDAG will invest in transportation infrastructure that will provide more choices, strengthen the economy, promote a healthy environment, and support thriving communities. The plan identifies projects aimed to improve the regional transportation system (SANDAG, 2015).	Region	Ongoing	Present and Reasonably Foreseeable
19	Federal Regional Transportation Plan	SANDAG	SANDAG prepared a 2019 Federal RTP (SANDAG, 2019d) that complies with federal requirements for the development of regional transportation plans, retains air quality conformity approval from the U.S. Department of Transportation, and preserves funding for the region's transportation investments. The 2019 Federal Regional Transportation Plan builds on the previous plan, San Diego Forward: The 2015 Regional Plan, with updated project costs and revenues and a new regional growth forecast. New investments in the regional transportation network will provide people with more travel choices while protecting the environment, creating healthy communities, and stimulating economic growth.	Region	2021+	Reasonably Foreseeable
20	Sorrento to Miramar Double Tracking	SANDAG	As part of the Regional Transportation Improvement Program, SANDAG is working to add approximately 3 miles of second main track to the San Diego region's coastal rail corridor (SANDAG, 2016). The project is being designed and constructed in two phases. The project is a critical part of the 351-mile rail corridor and serves as a vital link for passenger and freight movements in San Diego County.	Between the Sorrento Valley Station and Miramar Road	Phase I: 2012-2014 Phase I: 2021+	Phase I: Past Phase II: Reasonably Foreseeable
21	Barnett Bridge Rehabilitation	SANDAG	As part of the Regional Transportation Improvement Program (SANDAG, 2020b), this project is for the rehabilitation of Barnett Avenue Bridge over Pacific Highway.	Between OTC Site 1 and OTC Site 2	Currently Unknown	Reasonably foreseeable
22	Coastal Rail Trail	SANDAG	As part of the Regional Transportation Improvement Program (SANDAG, 2020b), the proposed multi-use path will begin near the City of Del Mar at the intersection of Carmel Valley Road and Sorrento Valley Road and continue to Union Station in downtown San Diego. The Coastal Rail Trail is a multi-jurisdictional project among the coastal cities of Oceanside, Del Mar, Carlsbad, Encinitas, Solana Beach and San Diego.	East of OTC Site 1 (adjacent to railroad tracks)	Currently Unknown	Reasonably foreseeable
23	Mid-Coast Corridor Transit Project	SANDAG	As part of the Regional Transportation Improvement Program (SANDAG 2014b, 2020), this project will extend the Trolley Blue Line from the Santa Fe Depot in downtown San Diego to the University Towne Center Transit Center in University City, providing continuous service from the San Ysidro Transit Center to University City.	East of OTC Site 1 (railroad tracks)	Ongoing – 2021+	Present
24	Central Mobility Hub connection to San Diego International Airport (also referred to in this EIS [see Section 1.5.1.2] as the "*potential*")	SANDAG	SANDAG is exploring the potential future establishment of a Central Mobility Hub with connection from a transit center to the San Diego International Airport (an "automated people mover"). On December 7, 2018, the SANDAG Board of Directors established the Airport Connectivity Subcommittee to lead discussions and explore options for how best to build consensus around transportation solutions for improved connectivity to the San Diego International Airport for generations to come. On December 21, 2018, the Board of Directors allocated $1 million to develop and analyze conceptual transportation solutions including the potential for a Central Mobility Hub – a location where multiple modes of transportation options converge to provide convenient	Potentially within, adjacent to, or near OTC Site 1	Currently unknown	Reasonably Foreseeable

Action Number	Cumulative Action Name	Action Proponent	Summary of Action	Action Location(s)	Construction/ Implementation Timeline	Past, Present or Reasonably Foreseeable
			connections for people to access the San Diego International Airport and other regional destinations. Four primary concepts were developed (SANDAG, 2019a): Concept 1 – A Central Mobility Hub at OTC, including a multi-modal transportation center with a high-frequency automated people mover service to a transit-ready area located between Terminals 1 and 2. Concept 1 assumes a non-stop, high-speed service to the airport via a one-mile tunnel. Concept 2 – A Central Mobility Hub as described in Concept 1, but instead of a tunnel, service to San Diego International Airport would be provided via a 3.6-mile surface/elevated automated people mover route along Pacific Highway, Laurel Street, and Harbor Drive with intermediate stops at the airport Rental Car Center and the planned development at Harbor Island East Basin. Concept 3 – A Central Mobility Hub at the planned Intermodal Transit Center, which includes a multi-modal transportation center with numerous connections to regional transit lines, high-frequency automated people mover service to San Diego International Airport, and an airport-like curb drop-off for auto-based travelers. An automated people mover station would provide service to the airport via a 2.6-mile surface/elevated route along Pacific Highway, Laurel Street, and Harbor Drive, with intermediate stops at the airport Rental Car Center and planned development at Harbor Island East Basin. Concepts 4a and 4b include an extension of the Trolley system to the planned San Diego International Airport transit station with an intermediate stop at the planned development at Harbor Island East Basin.			
25A-25J	Various construction, redevelopment, maintenance, recreation, infrastructure, and transportation projects	Port of San Diego	The Port of San Diego has identified several past, present, and reasonably foreseeable actions within the greater San Diego Bay region (Port of San Diego, 2020a, 2019). While many of these projects are outside of the geographic scope of most resource area ROIs for all five action alternatives, they are consolidated here to provide a broad capture of those projects that have the potential to contribute to cumulative effects on a larger scale, namely transportation, additional recreation amenities, land use, and socioeconomic investment. The projects include the following: A. Hotel Development for the Elbow Parcel on Harbor Island B. Water Group 1030 Project (Water Mainline Replacement) (Shelter Island) C. B Street Shore Power Project D. Portside Pier Restaurant Redevelopment Project E. Americas Cup Harbor Improvements - Phase I North Harbor Drive Realignment F. Shelter Island Boat Launch Facility Improvements G. Set Back Park/Plaza (Broadway Pier) H. Public Viewing Platform I. Harbor Island West Marina Redevelopment J. Lockheed Martin Company Marine Terminal Demolition Project (Port of San Diego, 2020a).	San Diego Bay	2017-2030+	Past, Present, and Reasonably Foreseeable
26	San Diego Bay Fireworks Display Events	Port of San Diego	Addition of an Ordinance to the Port District Code that established a program to regulate fireworks. Specifically, the program governs the existing and proposed new fireworks display events requiring a discretionary action by the District or operated by the District's tenants that occur within the San Diego Bay and Imperial Beach Oceanfront. Four new fireworks display events were anticipated to require a future discretionary action by the District, including three displays along the Chula Vista Bayfront and one display along the National City Bayfront. The Port of San Diego has prepared a Final EIR for the activity (Port of San Diego, 2017b).	San Diego Bay and Imperial Beach Oceanfront	Ongoing	Present and Reasonably Foreseeable
27	Integrated Planning Process – Port Master Plan Update	Port of San Diego	Comprehensive Update of the Port Master Plan (Port of San Diego, 2020b) that is anticipated to include new topical sections, or elements, to provide Bay-wide guidance related to Land and Water Use, Coastal Access and Recreation, Mobility, Natural Resources, Safety and Resiliency, and Economic Development.	Throughout Port District	Planning Phase	Reasonably Foreseeable
28	San Diego Bay Watershed Water Quality Improvement Plan	City of San Diego	The purpose of the Watershed Water Quality Improvement Plan (City of San Diego, 2016d) is to guide the responsible parties within the San Diego Bay Watershed (totaling 11 parties) toward achieving improved water quality in discharges and receiving waters. The Plan identifies strategies and actions to improve water quality.	San Diego Bay Watershed	Ongoing	Present
29A-29G	San Diego International Airport - Airport Development Plan	San Diego County Regional Airport Authority	The San Diego County Regional Airport Authority is proposing the next master planning phase for the San Diego International Airport, referred to as the Airport Development Plan. Specific projects identified in the Airport Development Plan and analyzed in the EIR (San Diego International Airport, 2020b) include: A. New Taxiway A B. Dual-Level Roadway and Curbfront C. Transit-Ready Area	San Diego International Airport	2021-2024	Reasonably Foreseeable

Action Number	Cumulative Action Name	Action Proponent	Summary of Action	Action Location(s)	Construction/ Implementation Timeline	Past, Present or Reasonably Foreseeable
			D. New Terminal 1 E. New Parking Structure F. On-Airport Entry Roadway G. Connection to Potential Regional Mobility Hub (see Action #24)			
30	Navy Broadway Complex/Manchester Pacific Gateway Development Project	Navy/Private	Work is underway on a $1.6 billion Manchester Pacific Gateway Development (Manchester Pacific Gateway, 2020) project to transform leased Navy property on San Diego's downtown waterfront into a 12.7-acre development with seven new buildings, including a 17-story office structure that will replace the Navy Broadway Complex and serve as the Navy's regional headquarters.	Broadway/ Harbor Drive/Pacific Coast Highway	2018-2021	Present
31	Hacienda Heights Apartments	Private	Construction of a 20,000-square foot, 14-unit apartment building on a 41,000-square foot lot (City of San Diego, 2020g).	3975 Old Town Avenue	Under construction	Present
32A, 32B	Cleanup of two Hazardous Sites	California Department of Toxic Substances Control	The first site is located at the intersection of Pacific Highway and Bandini Street. This site is currently classified as Active by the Department of Toxic Substances Control. The second site houses the Veterans Village of San Diego facility. This site is currently classified as Active by the Department of Toxic Substances Control.	Near southeast corner of OTC Site 1	Ongoing	Present
33A-33C	Construction of Three Liberty Station Area Hotels	Private	Three new hotels providing a total of approximately 650 rooms (City of San Diego, 2020g).	North Harbor Drive at Kincaid Road	Two hotels completed (2019); one under construction	Present
34	Midway Post Office Redevelopment (“The Post”)	Private	A private developer plans to turn the former postal site into an upscale urban office complex, referred to as “The Post.” The Post would provide approximately 230,000 square feet of rentable office space. Parking would be included at a ratio of 3.5 spaces per 1,000 square feet. In addition, the project proposes three outdoor recreation elements (a nature walk, open space/lawn, and a linear park) (The Post, 2020). 2020 media coverage indicated the potential for residential development on a portion of the site (NBC San Diego, 2020).	2535 Midway Drive	Currently unknown	Reasonably Foreseeable
35	Sports Arena Redevelopment	Private/City of San Diego	The City is seeking proposals to revamp and revitalize this 48-acre site into a commercial center and housing area to add more entertainment options and affordable housing. In July 2020, the city released two design visions for public review. Both visions would create a community-centric area consisting of new commercial and residential units (1,442 to 2,100 units), parking, and public parks (5-12 acres) (City of San Diego, 2020d).	3500 Sports Arena Blvd	Currently unknown	Reasonably Foreseeable
36	UCSD Long Range Development Plan for the Hillcrest Campus	UCSD	Through the 2019 Long Range Development Plan, UCSD addresses replacement of the campus’s aging and outdated buildings and the need for its acute care facilities to become compliant with seismic safety provisions of the California Hospital Code by 2030. UCSD also proposes to add 1,000 housing units to the campus (UCSD, 2019).	Uptown/ Hillcrest	2021-2030	Reasonably Foreseeable
37	Riverwalk San Diego	Private development - Hines	The proposed plan is to transform the existing Riverwalk area into a balanced, mixed-use, transit-oriented community with a large new public park, residential living (4,300 apartments [400 affordable units]), community-oriented retail uses (152,000 square feet of retail, new transit access [trolley station]), and office space (1,000,000 square feet) (Riverwalk San Diego, 2020).	Mission Valley with bicycle and pedestrian connections near Navy OTC	2022-2028	Reasonably Foreseeable
38	Hotel Redevelopment	Private	Redevelopment of an existing hotel for a new hotel (City of San Diego, 2020i).	3330 Rosecrans Street	2021+	Reasonably Foreseeable
39	Redevelopment Project	Private	Panera Bread is redeveloping this site (City of San Diego, 2020i).	3711 Sports Arena Blvd	2021+	Reasonably Foreseeable
40	Seaport San Diego	Protea Waterfront Development	Redevelopment of the existing approximately 40 acres of land and 30 acres of water at Seaport Village. The project would provide community resources and world-class amenities and attractions for residents and visitors. Elements include parks, a plaza, an urban beach, resort district, places to shop, and hotels. The project site is bordered by the USS Midway Museum and Harbor Drive to the north, Manchester Grand Hyatt and Kettner Boulevard to the east, and San Diego Bay to the south and west (Seaport San Diego, 2021).	Seaport Village	2024+	Reasonably Foreseeable

Legend: EIR = Environmental Impact Report; HVAC = heating, ventilation, and air conditioning; MCRD = Marine Corps Recruit Depot; NAVWAR = Naval Information Warfare Systems Command; Loma; PFAS = Per- and Poly-fluoroalkyl Substances; SANDAG = San Diego Association of Governments; UCSD = University of California San Diego.

Table 4.3-2 Summary of Cumulative Action and their Relevance to the Proposed Action Alternatives and Resource Areas

Action Number	Cumulative Action Title	Time Frame			OTC Action Alternatives			Resource Areas Assessed for Cumulative Impact														
		Past	Present	Reasonably Foreseeable	1	2 & 3	4 & 5	Air Quality	Water Resources	Geological Resources	Cultural Resources	Biological Resources	Land Use	Visual Resources	Airspace	Noise	Infrastructure	Transportation	Public Health and Safety	HazMat and Wastes	Socioeconomics	Environmental Justice
	Naval Base Point Loma																					
1A-1B	Miscellaneous Facility Operations and Maintenance Actions (54 total)	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓		✓		✓	✓	✓		
2A-2C	Active IR – Sites 1, 10, & 11		✓		✓	✓	✓		✓			✓							✓	✓		
3	Preliminary Assessment of Potential Contamination		✓		✓	✓	✓												✓	✓		
	MCRD San Diego Actions																					
4	Construct an automatic car wash with vacuum bays		✓		✓	✓	✓	✓	✓	✓	✓			✓			✓	✓				
5	Demolish decentralized cogeneration plant		✓		✓	✓	✓	✓			✓			✓		✓	✓			✓		
6	Construct a one-story Provost Marshal's Office facility with garage			✓	✓	✓	✓	✓		✓	✓			✓				✓				
7	Consolidate medical and dental facilities into a two-story building			✓	✓	✓	✓	✓			✓			✓				✓				
8	Construct new one-story Mess Hall and demo existing			✓	✓	✓	✓	✓		✓	✓			✓		✓				✓		
9	Construct replacement switching station			✓	✓	✓	✓	✓		✓	✓			✓								
	City of San Diego Community Plans and Actions																					
10	San Diego General Plan and EIR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
11	Midway-Pacific Highway Community Plan Update and EIR		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
12	Old Town Community Plan and EIR	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
13	Uptown Community Plan Update and EIR		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
14	Climate Action Plan		✓	✓	✓	✓	✓	✓					✓				✓	✓			✓	
15	Pacific Highway Cycle Tracks			✓	✓	✓	✓	✓					✓					✓	✓			
	SANDAG Plans and Actions																					
16	2050 Regional Transportation Plan			✓			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓
17	Regional Transportation Improvement Program		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓
18	San Diego Forward: The Regional Plan		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
19	Federal Regional Transportation Plan		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓
20	Sorrento to Miramar Double Tracking (Phases I & II)	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓			✓	
21	Barnett Bridge Rehabilitation			✓	✓	✓	✓						✓	✓		✓		✓	✓			
22	Coastal Rail Trail			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
23	Mid-Coast Corridor Transit Project		✓				✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
24	Central Mobility Hub Connection to San Diego International Airport			✓			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
	Port of San Diego Actions																					
25A-25J	Various construction, maintenance, transportation, etc. projects (10 total)	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
26	San Diego Bay Oceanfront Fireworks Display Events		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
27	Integrated Planning Process – Port Master Plan Update		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓

Action Number	*Cumulative Action Title*	*Time Frame*			*OTC Action Alternatives*			*Resource Areas Assessed for Cumulative Impact*														
		Past	Present	Reasonably Foreseeable	1	2 & 3	4 & 5	Air Quality	Water Resources	Geological Resources	Cultural Resources	Biological Resources	Land Use	Visual Resources	Airspace	Noise	Infrastructure	Transportation	Public Health and Safety	HazMat and Wastes	Socioeconomics	Environmental Justice
	Miscellaneous Plans and Actions																					
28	San Diego Bay Water Quality Improvement Plan			✓	✓	✓	✓		✓			✓					✓					
29	San Diego International Airport – Airport Development Plan			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
30	Navy Broadway Complex/Manchester Pacific Gateway Development Project		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
31	Hacienda Heights Apartments		✓			✓	✓			✓			✓	✓		✓	✓	✓			✓	
32A, 32B	Cleanup of Two Hazardous Sites		✓		✓	✓	✓		✓	✓			✓			✓			✓	✓	✓	✓
33A-33C	Construction of Three Liberty Station Hotels		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓
34	Midway Post Office Redevelopment (The Post)			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
35	Sports Arena Redevelopment			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
36	UCSD Long Range Development Plan – Hillcrest Campus			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
37	Riverwalk San Diego			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
38	Hotel Redevelopment			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓
39	Redevelopment Project			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓
40	Seaport San Diego			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	

Legend: EIR = Economic Impact Report; MCRD = Marine Corps Recruit Depot; OTC = Old Town Campus; SANDAG = San Diego Association of Governments; UCSD = University of California San Diego.

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4.3.2.2 City of San Diego Community Plans

The California Government Code gives local governments the authority to create land use policies within their jurisdictional boundaries and the ability to create a citywide land use and policy document called a General Plan. Large cities, such as San Diego, often subdivide the city into a number of community plans, or "mini" land use policy plans for more specific geographic areas. The City of San Diego's General Plan comprises ten elements that provide a comprehensive slate of citywide policies and further the City of Villages smart growth strategy for growth and development (City of San Diego, 2020e).

Community plans work together with the General Plan to provide location-based policies and recommendations in the City of San Diego's fifty-plus community planning areas. Community plans are written to refine the General Plan's citywide policies, designate land uses and housing densities, and provide additional site-specific recommendations as needed. The community plans are integrated with the General Plan and must not contain policies or recommendations that are inconsistent with any element of the General Plan or to other community plans (City of San Diego, 2020e).

A community plan is a public document which contains specific proposals for future land uses and public improvements in a given community. A community plan provides tailored policies and a long range physical development guide for elected officials and citizens engaged in community development. Typical elements found in a community plan include: Land Use, Transportation, Urban Design, Public Facilities and Services, Natural and Cultural Resources, and Economic Development (City of San Diego, 2020f).

The OTC is located within the focus area of the Midway-Pacific Highway Community Plan, which is adjacent to the area addressed in the Old Town San Diego Community Plan and is roughly adjacent to boundaries of the Old Town San Diego Community Plan and the Uptown Community Plan (see Figure 4.2-4).

Each of these community planning areas have developed their own plans, reflective of stakeholder input. The plans establish the policy framework that guides future development in pursuit of the community vision, consistent with the General Plan goals and policies. The City of San Diego has also prepared companion EIRs for each of the community plans that consider the environmental impacts associated with implementing the respective plans. The EIRs analyze the distribution and arrangement of land uses (public and private); the street, multi-modal mobility, and transit network; provision of parks and public facilities; community-wide and site-specific urban design guidelines; and recommendations to preserve and enhance historic and cultural resources within the community.

Due to their breadth, depth, and reflection of a collaborative community development process, the community plans are important considerations when evaluating the potential cumulative impacts of the Proposed Action Alternatives in conjunction with the identified cumulative actions.

The City of San Diego recognizes the importance of the Navy's presence at OTC. The Midway-Pacific Highway Community Plan (City of San Diego, 2018a) recognizes that OTC (and MCRD San Diego) are facilities of national importance and are particularly important to the economies of Midway-Pacific Highway and the City of San Diego. Both installations bring federal expenditures into San Diego, which helps to support the local economy.

As detailed in the Midway-Pacific Highway Community Plan and further demonstrated by several of the identified cumulative actions, the Midway-Pacific Highway area is poised for major redevelopment in the coming years. The community plan presents a potential future development goal of 10,155 additional residential units, 4,370 jobs, 23,660 people, and 300,000 square feet of non-residential development. As shown in Table 4.3-1, The Post would provide 230,000 square feet of rentable commercial space and the Sports Arena redevelopment would increase the amount of housing units. Collectively, these and other actions have the potential to alter the existing landscape of the area, irrespective of the Proposed Action Alternatives considered in this EIS. These alterations would contribute to the aforementioned quantitative goals contained in the Midway-Pacific Highway Community Plan.

4.3.2.3 SANDAG Transportation Plans and Program

Eighteen city and county governments comprise SANDAG. As a public agency, SANDAG serves as the forum for regional decision making. SANDAG builds consensus among San Diego County cities, and local, regional, and federal agencies with jurisdiction over resources and actions proposed in the county; makes strategic plans; obtains and allocates resources; plans, engineers, and builds public transportation, and provides information on a broad range of topics pertinent to the region's quality-of-life. SANDAG allocates millions of dollars each year in local, state, and federal funds for the San Diego region’s transportation network. Some of SANDAGs plans include:

- 2050 Regional Transportation Plan (SANDAG, 2011a)
- San Diego Forward: The 2015 Regional Plan (SANDAG, 2015)
- San Diego Forward: The 2019 Federal Regional Transportation Plan (SANDAG, 2019d)

In general, these and other plans serve as a blueprint for how the region will grow, and how SANDAG governments will invest in transportation infrastructure that will provide more choices, strengthen the economy, promote a healthy environment, and support thriving communities (SANDAG, 2015). SANDAG planning documents contemplate the construction of central mobility hubs in the City of San Diego, and SANDAG is exploring the possibility of a future mass transit connection to the San Diego International Airport (Action #24).

Due to their vision and collaborative government and community development, SANDAG’s plans and programs are important considerations when evaluating the potential cumulative impacts, in particular for Alternatives 4 and 5.

4.4 Cumulative Impact Analysis

4.4.1 Air Quality

4.4.1.1 Description of Geographic Study Area

The ROI for assessing cumulative air quality impacts from criteria pollutants and HAPs includes the immediate area surrounding OTC and the larger SDAB region. The immediate area surrounding OTC is the focus of localized cumulative impacts due to onsite emissions from proposed construction and operations. Onsite construction equipment would be a main source of construction emissions. Vehicle traffic generated by proposed construction and operations would be the main source of offsite emissions. This traffic would disperse through regional roadway systems and therefore its contribution to localized cumulative impacts would decrease with distance from OTC. The SDAB domain is appropriate for evaluating how mass emissions from the action alternatives would affect cumulative levels of regional pollutants such as ozone.

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

4.4.1.2 Relevant Past, Present, and Future Actions

The affected environment section (Section 3.1, *Air Quality*) describes the existing air quality conditions, which reflect the aggregate impacts of past and present actions within the ROI. For example, the SDAB is in attainment of all criteria pollutants regulated under the NAAQS except ozone. In addition, the SDAB does not meet the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. These conditions define how past and present actions currently affect air quality within the ROI and provide the context for the cumulative impacts analysis.

Past, present, and reasonably foreseeable actions that have a potential to interact with the Proposed Action Alternatives and to produce cumulative air quality impacts include existing and future sources of emissions in proximity to OTC and within the greater San Diego metropolitan area and the SDAB. Vehicle traffic on Interstate 5 and city streets surrounding OTC represent the primary sources of emissions within the localized ROI. Table 4.3-1 lists past, present, and reasonably foreseeable construction and operation actions that also could interact with the action alternatives to produce cumulative air quality impacts within either the localized or regional ROI.

Future development and an increase in population could contribute to an increase in cumulative emissions in the project region compared to existing conditions within the ROI. However, the criteria pollutant attainment planning processes implemented by the SDAPCD includes emission reduction strategies that would further progress towards attainment and maintenance of the ambient air quality standards in the region. Statewide, regional (SANDAG), and the City of San Diego GHG initiatives currently proposed also are designed to reduce criteria pollutant and GHG emissions within the ROI.

Based on ambient TAC (essentially HAPs) concentrations recorded at the El Cajon and Chula Vista monitoring stations in 2018, the SDAPCD estimated that these pollutants would produce cancer risks of 356 chances per million and 389 chances per million, respectively, at these locations. DPM was not included in this assessment. However, CARB estimated that the average excess cancer risk from DPM in California in 2014 was 460 chances per million (SDAPCD, 2019). The cancer risk due to background levels of HAPs emissions surrounding OTC is unknown at this time. The SDAPCD estimated that mobile and area sources in 2018 (such as residential fuel combustion, road dust, and solvent usages) each contributed about 42 percent of all TAC emissions in San Diego County. Given the prevalence of mobile sources that operate in proximity to OTC (Interstate 5, city streets, railroads, and the San Diego International Airport) and the surrounding area sources, it is expected that the background cancer risk generated by HAPs emissions from these sources are above levels of concern (at least 100 chances per million).

Scientific evidence indicates a correlation between the worldwide proliferation of GHG emissions by humankind and increasing global temperatures over the past century. Scientific organizations predict that future global climate change will produce negative environmental, economic, and social consequences across the globe (Intergovernmental Panel on Climate Change, 2014; U.S. Global Change Research Program, 2018; State of California, 2020).

4.4.1.3 Cumulative Impact Analysis

Cumulative air quality impacts from the Proposed Action Alternatives are based on the net increase in emissions that would occur from an alternative relative to the No Action Alternative, in combination with emissions from cumulative actions. The qualitative analysis considered the cumulative effects of these emissions in regard to their potential to (1) contribute to an exceedance of an ambient air quality standard on local and regional levels, (2) contribute to significant public health impacts from HAPs, and 3) affect climate change.

Implementation of management practices proposed for construction and operation of each action alternative (see Section 3.1.5.9, *Air Quality*) would minimize emissions and resulting cumulative impacts.

Alternative 1

As presented in Section 3.1, *Air Quality*, implementation of Alternative 1 would result in less than significant impacts to air quality. The following analysis considers the implementation of Alternative 1 in combination with the identified cumulative actions for each of the air quality resource area categories.

Criteria Pollutants

<u>Construction</u>

Construction activities under Alternative 1 would produce emissions well below all emission significance thresholds (see Section 3.1, *Air Quality*, Table 3.1-11). Emissions from onsite construction activities mainly would occur from mobile equipment and area sources such as fugitive dust (see Section 3.1, *Air Quality*, Table 3.1-12). Release of these relatively minor amounts of emissions from OTC would quickly disperse to low levels in the community surrounding OTC. Emissions from delivery and haul trucks that access the site via adjacent roadways would not substantially add to these offsite impacts.

Contributions from cumulative sources to localized offsite project impacts would be limited by the geographical separation of the cumulative projects. Overlapping local impacts would mainly occur from vehicles on Interstate 5 and city streets surrounding OTC, and potentially construction and operation activities of major actions such as The Post. Transport of these emissions to the locality surrounding OTC would continue to result in ambient impacts of CO, NO_2, and particulate matter (PM_{10} and $PM_{2.5}$) below levels of concern, as demonstrated by the attainment status of these NAAQS in the ROI. Therefore, construction emissions from Alternative 1, in combination with emissions from nearby cumulative projects (Table 4.3-1), would not contribute to a localized exceedance of an ambient air quality standard.

On a regional scale, emissions from construction of Alternative 1 would combine with emissions from numerous regional cumulative actions (such as the Sports Arena redevelopment, Riverwalk San Diego, etc.; see Table 4.3-1) to produce cumulative air quality impacts. The *2020 Ozone Plan* evaluated emissions of VOC and NO_x due to planned or new Navy projects in San Diego County. The photochemical modeling analyses in the *2020 Ozone Plan* evaluated a growth projection of 1.08 and 8.34 tons per day of VOC and NO_x emissions, respectively, for combined Navy/USMC projects (See *2020 Ozone Plan* page 18). This growth projection included construction of the OTC project (the Plan assumed 94 and 193 tons of VOC and NO_x emissions over the entire construction period) (NAVFAC Southwest, 2018). The results of the modeling analyses in the *2020 Ozone Plan* showed that the contribution of VOC and NO_x emissions from future Navy projects in San Diego County, in combination with emissions from cumulative actions, would result in slightly higher ozone concentrations but no additional ozone standard exceedances. For comparison, construction of Alternative 1 would emit a maximum of 0.01 ton per day of VOC or NO_x emissions (or 5.07 and 5.36 tons per year of VOC and NO_x emissions, as shown in Table 3.1-12), which equates to 1.3 and 0.2 percent of the growth projections evaluated for new Navy projects in the *2020 Ozone Plan*. These new emissions from construction of Alternative 1 would fit within the growth projections evaluated for future Navy projects in the *2020 Ozone Plan* and therefore in combination with emissions from cumulative actions, would not contribute to an exceedance of an ozone standard.

<u>Operations</u>

Operational activities from Alternative 1 would produce a net increase in emissions that would be below all emission significance thresholds (see Section 3.1, *Air Quality*, Table 3.1-13). The offsite operation of vehicle trips would be the largest contributor to all pollutant emissions except VOC emissions, which would occur from the onsite use of consumer products (such as solvents and architectural coatings). Minor increases in emissions released from onsite OTC would quickly disperse to low ambient pollutant levels at offsite locations. In addition, the intermittent and mobile nature of emissions from vehicle traffic generated by Alternative 1 would result in low ambient air pollutant levels adjacent to offsite roadways. As stated above for construction, cumulative emission sources would produce low levels of ambient CO, NO_2, and PM impacts to localities surrounding OTC. Therefore, operational emissions from Alternative 1, in combination with emissions from nearby cumulative projects, would not be substantial enough to contribute to a localized exceedance of an ambient air quality standard.

Regarding regional impacts to ambient ozone from operation of Alternative 1, the *2020 Ozone Plan* evaluated emissions of VOC and NO_x due to planned or new Navy/USMC projects in San Diego County, as discussed above for construction of Alternative 1. For comparison, operation of Alternative 1 would result in a maximum net increase of 0.005 and 0.001 tons per day of VOC and NO_x emissions (1.64 and 0.44 tons per year of VOC and NO_x emissions, as shown in Table 3.1-13), which equates to 0.4 and 0.01 percent of the growth projections evaluated for new Navy/USMC projects in the *2020 Ozone Plan*. These new emissions from Alternative 1 would fit within the growth projections evaluated for future Navy/USMC projects in the *2020 Ozone Plan* and therefore in combination with emissions from cumulative actions, would not contribute to an exceedance of an ozone standard.

HAPs

<u>Construction</u>

As presented in Section 3.1, *Air Quality*, construction of Alternative 1 would generate HAPs resulting in less than significant public health impacts. Contributions from cumulative sources of HAPs to localized offsite project impacts mainly would occur from vehicles on Interstate 5 and city streets and area sources surrounding OTC. Vehicle and area source emissions from cumulative actions would produce ambient concentrations of HAPs that exceed health levels of concern to the locality surrounding OTC. When added to impacts from cumulative actions, implementation of Alternative 1 would produce significant cumulative health impacts adjacent to OTC.

<u>Operations</u>

As presented in Section 3.1, *Air Quality*, operation of Alternative 1 would generate minor amounts of HAP emissions and resulting public health impacts offsite OTC. Vehicle emissions and area sources from cumulative actions would produce ambient concentrations of HAPs that exceed health levels of concern adjacent to OTC. When added to the impacts from cumulative actions, operation of Alternative 1 would result in significant cumulative health impacts adjacent to OTC.

Greenhouse Gases

GHG emissions represent indicators of the potential for an alternative to contribute to climate change effects. Table 4.4-1 presents estimates of peak annual GHG emissions that would occur from construction and operation of Alternative 1 (see Section 3.1, *Air Quality* for presentations of GHG emission calculations for each analysis year).

Table 4.4-1 Peak Annual GHG Emissions, Action Alternatives 1 through 5

Alternative-Peak Year/Source Category	*CO_2e* (MT/yr)
Alternative 1 - Year 2026	
Construction(1)	349
Operation	12,389
Total	**12,738**
NEPA Baseline(2)	**10,673**
Alternative 1 Net Change(3)	**2,064**
Percent of 2018 California Inventory	**0.0005%**
Alternative 2 – Year 2050	
Construction	3,451
Operation	41,983
Total	**45,433**
NEPA Baseline	**8,127**
Alternative 2 Net Change	**37,306**
Percent of 2018 California Inventory	**0.009%**
Alternative 3 – Year 2050	
Construction	2,564
Operation	31,438
Total	**34,002**
NEPA Baseline	**8,127**
Alternative 3 Net Change	**25,875**
Percent of 2018 California Inventory	**0.006%**
Alternative 4 – Year 2050	
Construction	5,138
Operation	53,879
Total	**59,017**
NEPA Baseline	**8,127**
Alternative 4 Net Change	**50,890**
Percent of 2018 California Inventory	**0.01%**
Alternative 5 – Year 2050	
Construction	4,261
Operation	44,513
Total	**48,773**
NEPA Baseline	**8,127**
Alternative 5 Net Change	**40,646**
Percent of 2018 California Inventory	**0.01%**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; NEPA = National Environmental Policy Act.

Notes: (1) Construction emissions are amortized over 30 years.
(2) The NEPA baseline is the No Action Alternative.
(3) Net change = Alternative minus NEPA Baseline.

The peak net increase in annual GHG from Alternative 1 would be 2,064 metric tons of CO_2e and would occur during the first year of operation of OTC (year 2026). The Alternative 1 emissions increase would be approximately 0.0005 percent as large as the 2018 statewide GHG emissions. Vehicle trips generated by the alternative would be the largest contributor to GHG emissions.

Annual GHG from Alternative 1 would lessen slightly with time to a net increase of 1,741 metric tons of CO_2e by 2050. While GHG emissions generated from construction activities and subsequent operations alone would not be enough to cause global warming, in combination with past and future emissions from all other sources, they would contribute incrementally to the global warming that produces the adverse effects of climate change.

Construction and operation of Alternative 1 would comply with applicable GHG emission reduction strategies promulgated by the State of California, SANDAG, and City of San Diego (e.g., the Climate Action Plan) (CARB, 2017; SANDAG, 2015; City of San Diego, 2016a). In addition, the Navy would continue to implement proactive measures to reduce their overall emissions of GHG by decreasing the use of fossil fuels and increasing the use of alternative energy sources in accordance with the goals set by EOs, the Energy Policy Act of 2005, and Navy and DoD policies (refer to Appendix B for more information). These renewable energy initiatives are not emission reductions proposed to offset GHG emissions generated by an action alternative, but rather demonstrate initial responses for the Navy to factor GHG management into Navy proposals and impact analyses.

For the region within San Diego County and the location of OTC, the main effect of climate change is increased temperature and aridity, as documented by climate analyses presented in Sections 3.1, *Air Quality* and 5.4, *Climate Change*. These analyses predict that in the future, the region will experience (1) increases in temperatures, droughts, and sea level rise and (2) scarcities of water supplies. Operations at OTC have adapted to droughts, high temperatures, and scarce water supplies. However, exacerbation of these conditions in the future could impede proposed activities during extreme events. In addition, OTC and some cumulative actions could be vulnerable to sea level rise by late in the century, as discussed in Section 5.4, *Climate Change*.

The State of California developed strategies for adapting to future climatic effects (California Natural Resources Agency, 2018; Governor's Office of Emergency Services, 2020). The city of San Diego proposes a similar approach through their City of San Diego Climate Action Plan (City of San Diego, 2016a). Construction and operation of Alternative 1 and the cumulative actions would comply with these adaptation strategies where applicable. The DoD also conducts research on potential impacts from climate change and develops measures for installations to adapt to these threats, such as sea level rise (DoD Strategic Environmental Research and Development Program, 2020).

Summary

Emissions from construction and/or operation of Alternative 1 would not contribute to an exceedance of an ambient air quality standard. Emissions associated with Alternative 1 would contribute incrementally to global warming. Construction and operations under Alternative 1 would also contribute to cumulative HAP emissions that would exceed health levels of concern in proximity to OTC (see Section 4.4.8.3 for a cumulative analysis of HAP emissions to public health). Therefore, implementation of Alternative 1, when combined with the past, present, and reasonably foreseeable actions, would result in significant cumulative impacts to air quality within the ROI.

Alternatives 2 and 3

As presented in Section 3.1, *Air Quality*, implementation of Alternative 2 or 3 would result in less than significant impacts to air quality. The following analysis considers the implementation of Alternative 2 or 3 in combination with the identified cumulative actions for each of the air quality resource area categories. Implementation of Alternative 2 or 3 would include several years of combined construction and operations activities. Therefore, the cumulative analysis evaluated the following phases of each alternative: (1) construction activities, (2) concurrent construction and operations activities between years 2021 and 2049, and (3) full operations in year 2050.

Criteria Pollutants

Construction activities from Alternative 2 or 3 would produce emissions that remain well below all emission significance thresholds (see Section 3.1, *Air Quality*, Tables 3.1-16, 3.1-17, and 3.1-21). Emissions from onsite construction activities mainly would occur from mobile equipment and area sources such as fugitive dust (see Tables 3.1-17 and 3.1-21). Construction emissions released from OTC would quickly disperse offsite. Emissions from delivery and haul trucks that access the site via adjacent roadways would not substantially add to these offsite impacts. Contributions from cumulative sources to localized offsite project impacts mainly would occur from vehicles on Interstate 5 and city streets surrounding OTC. As stated above for Alternative 1, cumulative emission sources would produce low levels of ambient CO, NO_2, and PM impacts to localities surrounding OTC. Therefore, construction emissions from Alternative 2 or 3, in combination with emissions from nearby cumulative actions, would not be substantial enough to contribute to a localized exceedance of an ambient air quality standard.

The net emissions increases from construction and/or operation of Alternative 2 would remain below emission significance thresholds for all pollutants in all analysis years except VOC and NO_x (see Section 3.1, *Air Quality*, Table 3.1-18). The net increases in VOC and NO_x emissions from Alternative 2 would exceed the annual thresholds of 25 tons per year beginning in years 2043 and 2040, respectively. The net emissions increases from construction and/or operation of Alternative 3 would remain below all emission significance thresholds in all analysis years (see Section 3.1, *Air Quality*, Table 3.1-22). The offsite operation of vehicle trips generated by each alternative would be the largest contributor to all pollutant emissions except VOC, which would result from the onsite use of consumer products (such as solvents and architectural coatings). Increased emissions from onsite OTC would quickly disperse to low ambient pollutant levels. In addition, the intermittent and mobile nature of emissions from vehicle traffic generated by each alternative would result in low ambient air pollutant levels adjacent to offsite roadways. As stated above for construction, cumulative emission sources would produce low levels of ambient CO, NO_2, and PM impacts to localities surrounding OTC. Therefore, construction and/or operational emissions from Alternative 2 or 3 in combination with emissions from nearby cumulative actions would not be substantial enough to contribute to a localized exceedance of an ambient air quality standard.

Regarding regional impacts to ambient ozone from construction and/or operation of Alternatives 2 or 3, the *2020 Ozone Plan* evaluated emissions of VOC and NO_x due to planned or new Navy/USMC projects in San Diego County, as discussed above for construction of Alternative 1. For comparison, Alternative 2 would result in a maximum net increase of 0.10 and 0.11 tons per day of VOC and NO_x emissions (or 31.76 and 35.73 tons per year of VOC and NO_x emissions, as shown in Table 3.1-18), which equates to 8.1 and 1.2 percent of the growth projections evaluated for new Navy projects in the *2020 Ozone Plan*. In addition, Alternative 3 would result in a maximum net increase of 0.06 and 0.07 tons per day of VOC and NO_x emissions (or 21.02 and 24.12 tons per year of VOC and NO_x emissions, as shown in Table 3.1-22), which equates to 5.3 and 0.8 percent of the growth projections evaluated for new Navy projects in the *2020 Ozone Plan*. These new emissions from either Alternatives 2 or 3 would fit within the growth projections evaluated for future Navy/USMC projects in the *2020 Ozone Plan* and therefore, in combination with emissions from cumulative actions, would not contribute to an exceedance of an ozone standard. To ensure that VOC and NO_x emissions from construction and operation of Alternatives 2 or 3 would produce less than significant impacts, the Navy would implement mitigation measure AQ-1.

Operational emissions from Alternative 2 or 3 post-2048 would decrease somewhat in response to cleaner emissions standards implemented on future on-road and off-road sources. In addition, implementation of regional emissions reduction plans (e.g., the *2020 Ozone Plan*) would reduce regional emissions and resulting cumulative impacts within the ROI.

HAPs

As presented in Section 3.1, *Air Quality*, construction and/or operation of Alternative 2 or 3 would generate HAPs resulting in less than significant public health impacts. Contributions from cumulative sources of HAPs to localized offsite project impacts mainly would occur from vehicles on Interstate 5 and city streets and area sources surrounding OTC. Emissions from cumulative actions would produce ambient concentrations of HAPs that exceed health levels of concern to the locality surrounding OTC. When added to impacts from cumulative actions, implementation of Alternative 2 or 3 would produce significant cumulative health impacts adjacent to OTC.

Greenhouse Gases

Similar to the generation of criteria pollutants, annual GHG emissions from the implementation of Alternative 2 or 3 would increase with time as proposed development proceeds onsite (see Section 3.1, *Air Quality*, Tables 3.1-20 and 3.1-24). Table 4.4-1 shows that the peak net increase in annual GHG from Alternative 2 or 3 would be 37,306 or 25,875 metric tons of CO_2e, respectively. The Alternative 2 or 3 emissions increase would be approximately 0.009 or 0.006 percent as large, respectively, as the 2018 statewide GHG emissions. Vehicle trips generated by each alternative would be the largest contributor to GHG emissions.

While GHG emissions generated from construction activities and subsequent operations alone would not be enough to cause global warming, in combination with past and future emissions from all other sources they would contribute incrementally to the global warming that produces the adverse effects of climate change.

As discussed above for Alternative 1, construction and operation of Alternative 2 or 3 would comply with applicable GHG emission reduction and climate change adaptation strategies promulgated by the State of California, SANDAG, and City of San Diego.

Summary

Emissions from construction and/or operation of Alternatives 2 or 3 would not contribute to an exceedance of an ambient air quality standard. Emissions associated with Alternatives 2 or 3 would contribute incrementally to global warming. Construction and operations under Alternatives 2 or 3 would also contribute to cumulative HAP emissions that would exceed health levels of concern in proximity to OTC (see Section 4.4.8.3 for a cumulative analysis of HAP emissions to public health). Therefore, implementation of Alternatives 2 or 3, when combined with the past, present, and reasonably foreseeable actions, would result in significant cumulative impacts to air quality within the ROI.

Alternatives 4 and 5

As presented in Section 3.1, *Air Quality*, implementation of Alternative 4 or 5 would result in less than significant impacts to air quality. The following analysis considers the implementation of Alternative 4 or 5 in combination with the identified cumulative actions for each of the air quality resource area categories. Implementation of Alternatives 4 or 5 would include several years of combined construction and operations activities. Therefore, the cumulative analysis evaluated the following phases of each alternative: (1) construction activities, (2) concurrent construction and operations activities between years 2021 and 2049, and (3) full operations in year 2050.

Criteria Pollutants

Construction activities from Alternative 4 or 5 would produce emissions that remain well below all emission significance thresholds (see Section 3.1, *Air Quality*, Tables 3.1-16, 3.1-26, and 3.1-31). Emissions from onsite construction activities mainly would occur from mobile equipment and area sources such as fugitive dust (see Section 3.1, *Air Quality*, Tables 3.1-26 and 3.1-31). Construction emissions from OTC would quickly disperse offsite. Emissions from delivery and haul trucks that access the site via adjacent roadways would not substantially add to these offsite impacts. Contributions from cumulative sources to localized offsite project impacts mainly would occur from vehicles on Interstate 5 and city streets surrounding OTC. As stated above for Alternative 1, cumulative emission sources would produce low levels of ambient CO, NO_2, and PM impacts to localities surrounding OTC. Therefore, construction emissions from Alternative 4 or 5 in combination with emissions from nearby cumulative actions would not be substantial enough to contribute to a localized exceedance of an ambient air quality standard.

The net emissions increases from construction and/or operation of Alternatives 4 or 5 would remain below emission significance thresholds for all pollutants in all analysis years except VOC and NO_x (see Section 3.1, *Air Quality*, Tables 3.1-27 and 3.1-32). The net increases in VOC and NO_x emissions from Alternative 4 would exceed the annual thresholds of 25 tons per year beginning in years 2036 and 2035, respectively. The net increases in VOC and NO_x emissions from Alternative 5 would exceed the annual thresholds of 25 tons per year beginning in years 2040 and 2038, respectively. The offsite operation of vehicle trips generated by each alternative would be the largest contributor to all pollutant emissions except VOC emissions, which would result from the onsite use of consumer products (such as solvents and architectural coatings). Increased emissions from onsite OTC would quickly disperse to low ambient pollutant levels. In addition, the intermittent and mobile nature of emissions from vehicle traffic generated by each alternative would result in low ambient air pollutant levels adjacent to offsite roadways. As stated above for construction, cumulative emission sources would produce low levels of ambient CO, NO_2, and PM impacts to localities surrounding OTC. Therefore, construction and/or operational emissions from Alternative 4 or 5 in combination with emissions from nearby cumulative actions would not be substantial enough to contribute to a localized exceedance of an ambient air quality standard.

Regarding regional impacts to ambient ozone from construction and/or operation of Alternatives 4 or 5, the 2020 Ozone Plan evaluated emissions of VOC and NO_x due to planned or new Navy/USMC projects in San Diego County, as discussed above for construction of Alternative 1. For comparison, Alternative 4 would result in a maximum net increase of 0.14 and 0.15 tons per day of VOC and NO_x emissions (46.88 and 48.43 tons per year of VOC and NO_x emissions, as shown in Table 3.1-27), which equates to 11.9 and 1.6 percent of the growth projections evaluated for new Navy/USMC projects in the *2020 Ozone Plan*. In addition, Alternative 5 would result in a maximum net increase of 0.12 tons per day of both VOC and NO_x emissions (36.92 and 38.52 tons per year of VOC and NO_x emissions, as shown in Table 3.1-32), which equates to 9.4 and 1.3 percent of the growth projections evaluated for new Navy/USMC projects in the 2020 Ozone Plan. These new emissions from either Alternatives 4 or 5 would fit within the growth projections evaluated for future Navy/USMC projects in the 2020 Ozone Plan and therefore in combination with emissions from cumulative actions, would not contribute to an exceedance of an ozone standard. To ensure that VOC and NO_x emissions from construction and operation of Alternatives 4 or 5 would produce less than significant impacts, the Navy would implement mitigation measure AQ-1.

Operational emissions from Alternative 4 or 5 post-2048 would decrease somewhat in response to cleaner emissions standards implemented on future on-road and off-road sources. In addition, implementation of regional emissions reduction plans (e.g., the 2020 Ozone Plan) would reduce regional emissions and resulting cumulative impacts within the ROI.

HAPs

As presented in Section 3.1, *Air Quality*, construction and/or operation of Alternative 4 or 5 would generate HAPs resulting in less than significant public health impacts. Contributions from cumulative sources of HAPs to localized offsite project impacts mainly would occur from vehicles on Interstate 5 and city streets and area sources surrounding OTC. Emissions from cumulative actions would produce ambient concentrations of HAPs that exceed health levels of concern to the locality surrounding OTC. When added to impacts from cumulative actions, implementation of Alternative 4 or 5 would produce significant cumulative health impacts adjacent to OTC.

Greenhouse Gases

Similar to the generation of criteria pollutants, annual GHG emissions from the implementation of Alternative 4 or 5 would increase with time as proposed development proceeds onsite (see Section 3.1, *Air Quality*, Tables 3.1-30 and 3.1-34). Table 4.4-1 shows that the peak net increase in annual GHG from Alternative 4 or 5 would be 50,890 or 40,646 metric tons of CO_2e, respectively. The Alternative 4 or 5 emissions increase would be approximately 0.01 percent as large as the 2018 statewide GHG emissions. Vehicle trips generated by each alternative would be the largest contributor to GHG emissions.

While GHG emissions generated from construction activities and subsequent operations alone would not be enough to cause global warming, in combination with past and future emissions from all other sources they would contribute incrementally to the global warming that produces the adverse effects of climate change.

Construction and operation of Alternative 4 or 5 would also comply with applicable GHG emission reduction and climate change adaptation strategies promulgated by the State of California, SANDAG, and City of San Diego. For example, Alternative 4 or 5 would be consistent with the GHG emission reduction measures recommended in the City of San Diego Climate Action Plan.

Summary

Emissions from construction and/or operation of Alternatives 4 or 5 would not contribute to an exceedance of an ambient air quality standard. Emissions associated with Alternatives 4 or 5 would contribute incrementally to global warming. Construction and operations under Alternatives 4 or 5 would also contribute to cumulative HAP emissions that would exceed health levels of concern in proximity to OTC (see Section 4.4.8.3 for a cumulative analysis of HAP emissions to public health). Therefore, implementation of Alternatives 4 or 5, when combined with the past, present, and reasonably foreseeable actions, would result in significant cumulative impacts to air quality within the ROI.

4.4.2 Transportation

As part of this EIS, the Navy prepared a detailed transportation study (see Appendix C, Transportation Study). The analysis in the transportation study was developed over several months through coordination with SANDAG, the regional transportation authority. As shown in Table 4.3-2, the analysis and coordination with SANDAG resulted in identifying several individual cumulative development actions, community plans, specific plans, master plans, and development plans for inclusion in the study. For details on the cumulative actions considered, see Table 8-1 in Appendix C, Transportation Study.

4.4.2.1 Description of Geographic Study Area

The following list defines the ROI for the Proposed Action Alternatives. As the ROI expands for the alternatives, additional primarily transportation-related cumulative actions were considered in the analysis.

- Alternative 1: The ROI includes the surface streets leading to OTC.
- Alternatives 2 and 3: With the consideration of public-private partnerships and commercial development at OTC, the ROI for these alternatives includes surface streets and highways leading to OTC. The cumulative analysis groups these alternatives together due to similarities in the cumulative context.
- Alternatives 4 and 5: Due to the potential consolidation of a transit center to OTC, the ROI for these alternatives includes those of the prior alternatives with the addition of regional transportation programs, plans, and projects related to mass transit.

For streets and highways, the analysis considers a defined set of intersections, street segments, freeway segments, and ramp meter locations.

4.4.2.2 Relevant Past, Present, and Future Actions

The cumulative impacts analysis for transportation incorporates the affected environment, traffic growth in future years, and the alternatives with a full buildout by 2050. The year 2050 also corresponds with the time horizon associated with many of the identified RTPs described in Table 4.3-1. Table 4.3-2 identifies the cumulative actions considered in this analysis. As shown in Table 4.3-2, the actions identified capture short-term construction traffic related projects and long-term regional transportation improvement plans and programs.

4.4.2.3 Cumulative Impact Analysis

The transportation analysis in this section uses trip generation models developed for the year 2050. The year 2050 is included for estimation of potential cumulative impacts and incorporates the actions in Table 4.3-2. The analysis is based on the City of San Diego’s Significance Determination Thresholds (dated July 2016) where an action would have a significant impact if traffic would decrease the operations for surrounding roadways by a defined threshold, absent a reasonable mitigation strategy.

While the following analysis focuses on operational impacts, short-term construction-related cumulative impacts are also anticipated to occur for all Proposed Action Alternatives. Contractors would prepare Traffic Control Plans and construction Transportation Management Plans to deconflict, avoid, and/or reduce temporary construction impacts where possible. The following analysis summarizes the findings of the transportation study in Appendix C.

Alternative 1

As presented in Section 3.2, *Transportation*, implementation of Alternative 1 would result in significant operational impacts to area intersections. As detailed in Appendix C, Section 11, and shown on Figure 4.4-1, Alternative 1 in combination with the identified cumulative actions would result in nine significant impacts to transportation facilities in the year 2050. Of these nine impacts, impacts to five of the intersections would be fully mitigated and four would remain significant and unavoidable, with no current mitigations identified.

Despite the impacts, overall, implementation of Alternative 1 would be consistent with the transportation components identified in the Midway-Pacific Highway Community Plan. Furthermore, the community plan envisions improving and supplementing the existing mobility network of streets and freeway connections, pedestrian facilities, and bicycle facilities to meet existing and future transportation demand. Nonetheless, based on current plans and projects, and established significance criteria, the impacts to the nine intersections would be significant. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to transportation within the ROI.

Alternatives 2 and 3

As presented in Section 3.2, *Transportation*, implementation of Alternative 2 or 3 would result in significant operational impacts to area transportation facilities. As detailed in Appendix C, Sections 12 and 13, and shown on Figures 4.4-2 and 4.4-3, respectively, Alternative 2 or 3, in combination with the identified cumulative actions would result in 52 and 50 significant impacts to transportation facilities, respectively. For Alternative 2, of the 52 significant impacts, 24 impacts would be fully mitigated, 2 would be partially mitigated, and 26 impacts would remain significant and unavoidable. For Alternative 3, 25 impacts would be fully mitigated, 1 would be partially mitigated, and 24 impacts would remain significant and unavoidable.

Alternative 2 or 3 in combination with the cumulative actions would exceed the anticipated future transportation conditions identified in the Midway-Pacific Highway, Old Town, and Uptown Community Plans. While the full buildout of Alternative 2 or 3 would not occur until 2050, based on current plans and projects and established significance criteria, the impacts to 52 or 50 transportation facilities, respectively, would be significant. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to transportation within the ROI.

Alternatives 4 and 5

As presented in Section 3.2, *Transportation*, implementation of Alternative 4 or 5 would result in significant operational impacts to area transportation facilities. As detailed in Appendix C, Sections 15 and 16, and shown on Figures 4.4-4 and 4.4-5, respectively, Alternative 4 or 5 in combination with the identified cumulative actions would result in 53 significant impacts to transportation facilities.

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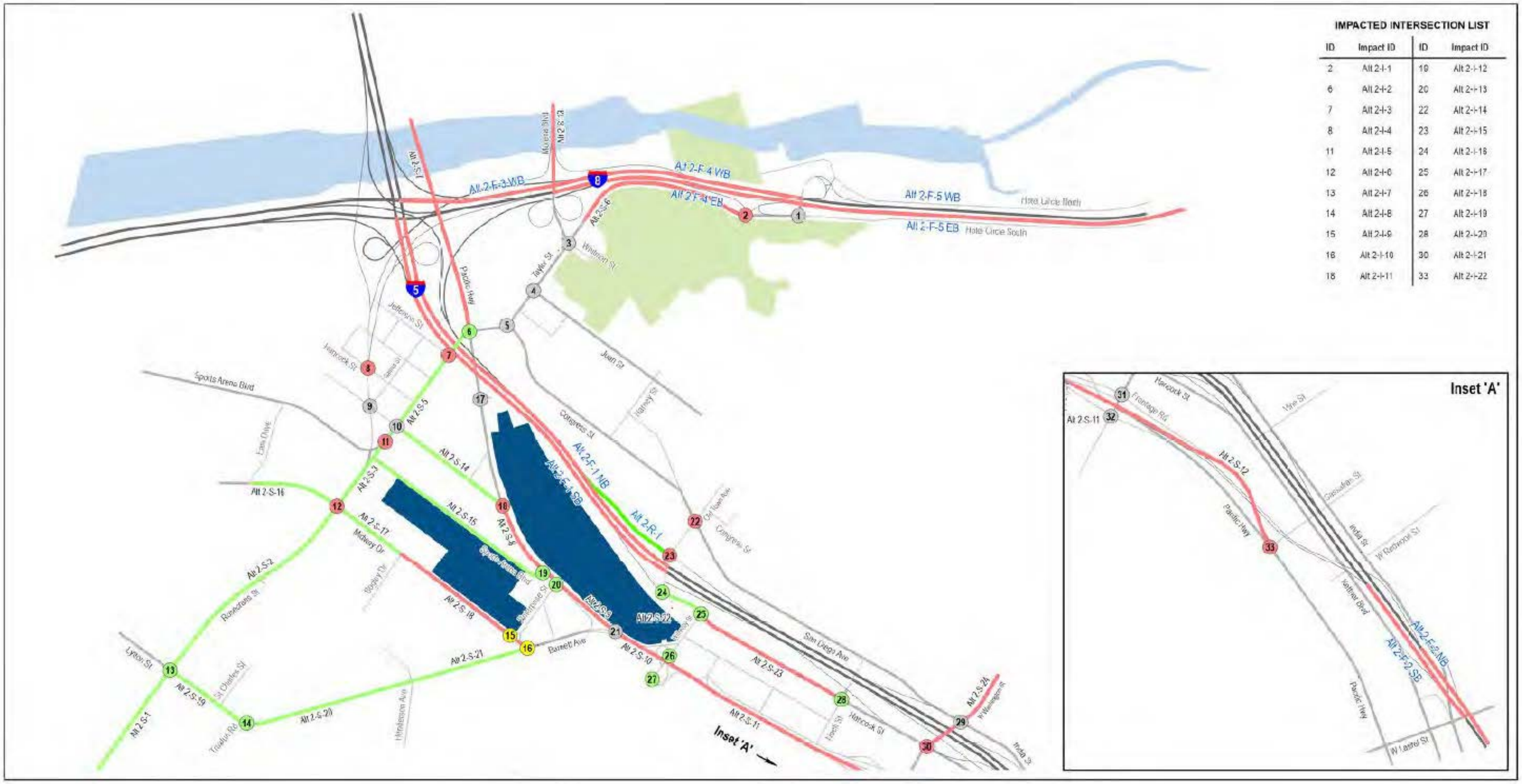
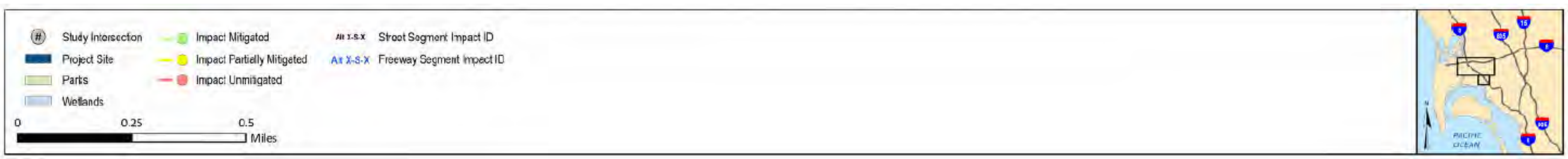
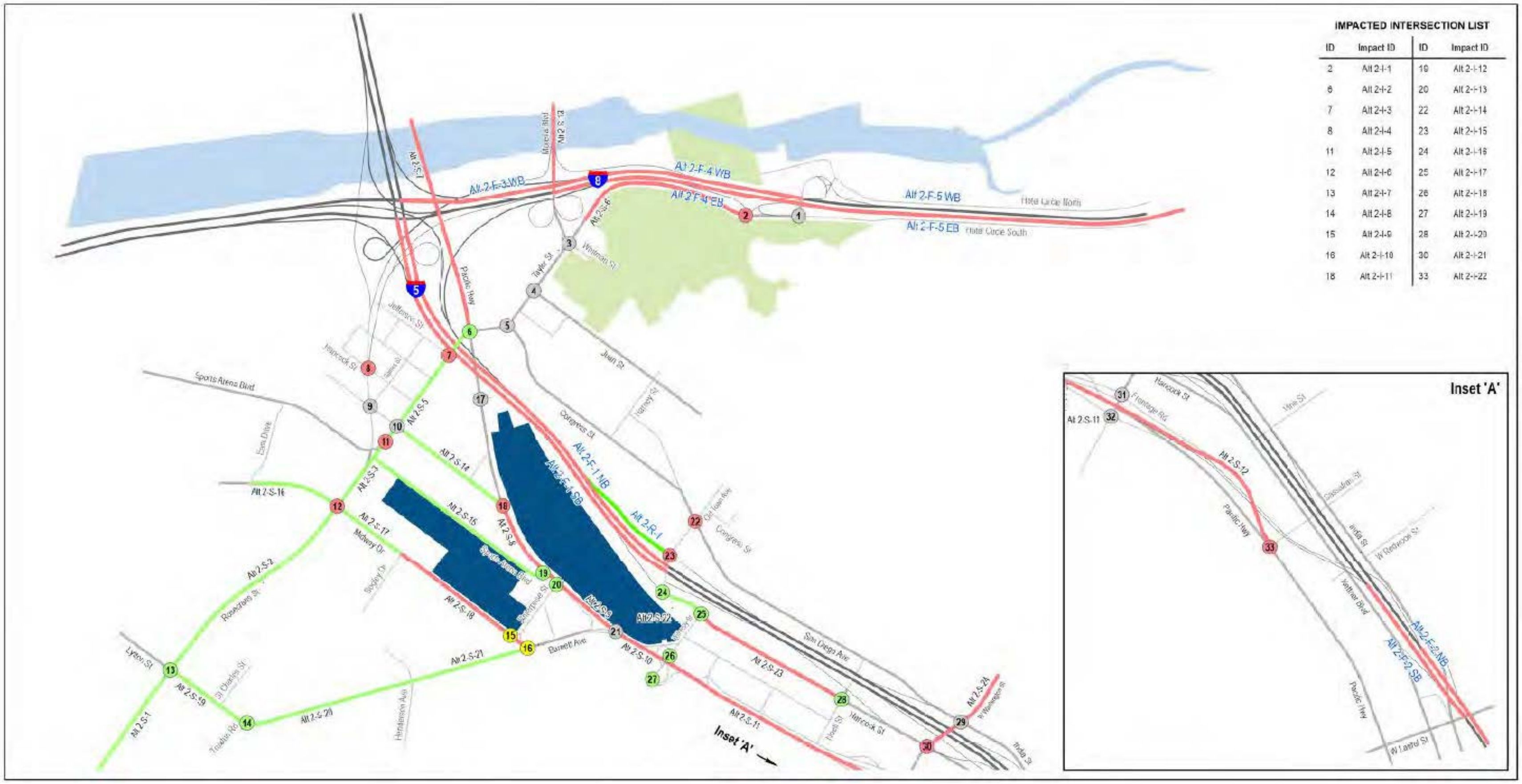


Figure 4.4-1 Cumulative Impacts to Intersections under Alternative 1





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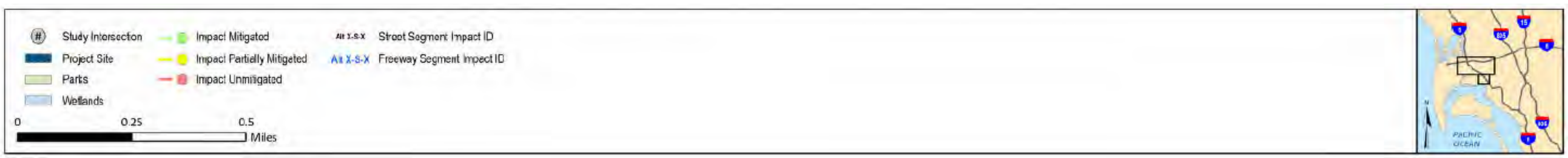
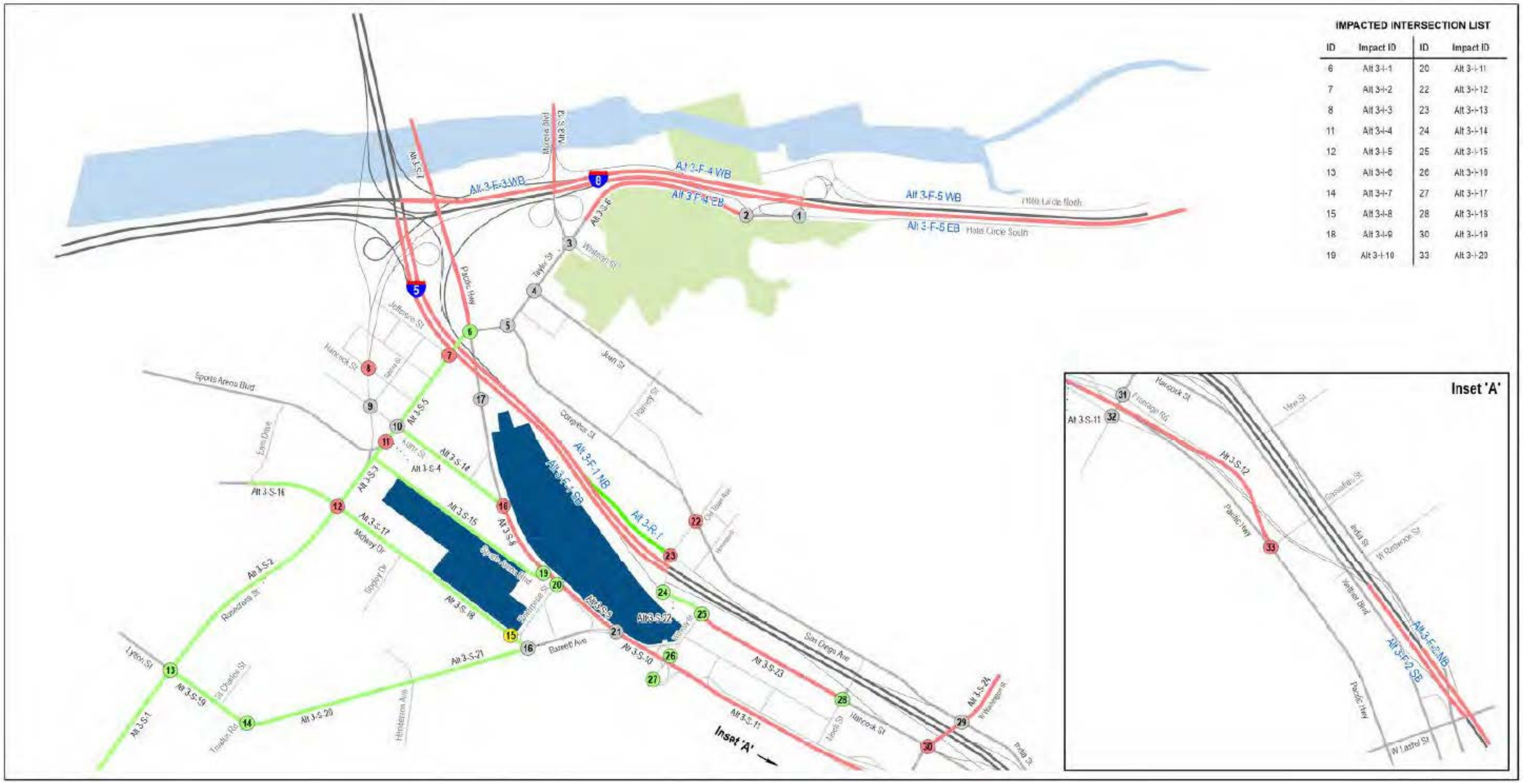
8	Alt 2-I-4	23	Alt 2-I-15
11	Alt 2-I-5	24	Alt 2-I-16
12	Alt 2-I-6	25	Alt 2-I-17
13	Alt 2-I-7	26	Alt 2-I-18
14	Alt 2-I-8	27	Alt 2-I-19
15	Alt 2-I-9	28	Alt 2-I-20
16	Alt 2-I-10	30	Alt 2-I-21
18	Alt 2-I-11	33	Alt 2-I-22

Figure 4.4-2 Cumulative Impacts ton Intersections under Alternative 2





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12	Alt 3-I-5	25	Alt 3-I-15
13	Alt 3-I-6	26	Alt 3-I-16
14	Alt 3-I-7	27	Alt 3-I-17
15	Alt 3-I-8	28	Alt 3-I-18
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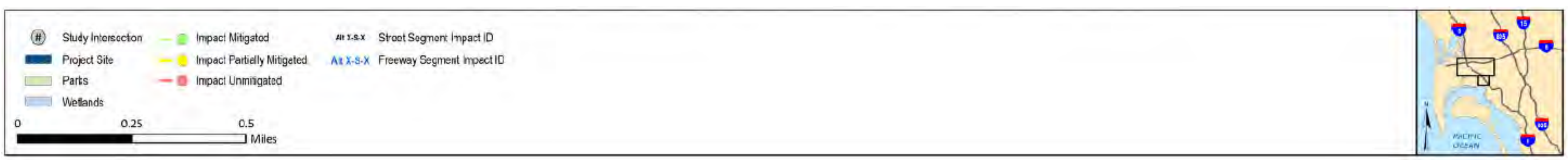
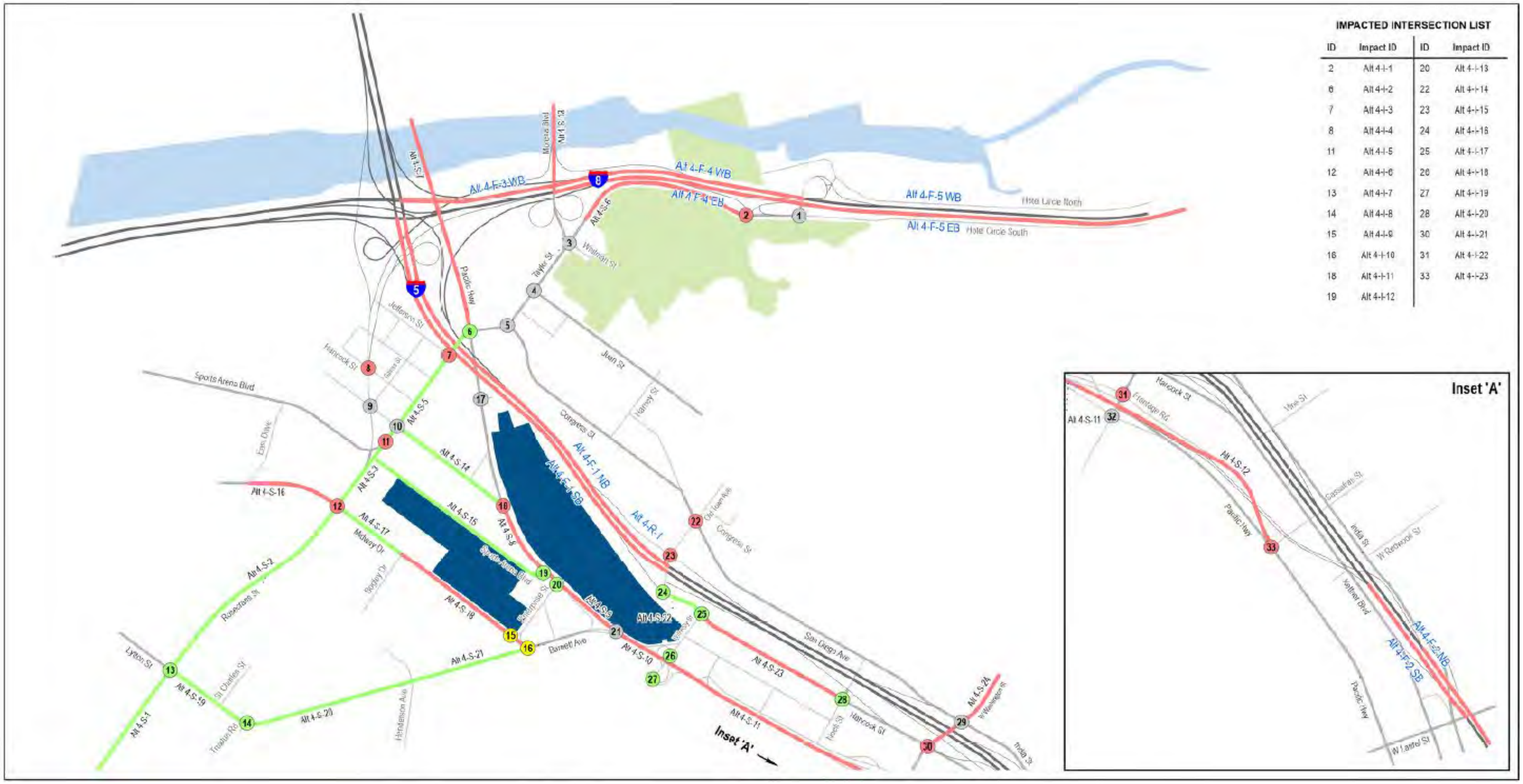
Figure 4.4-3 Cumulative Impacts to Intersections under Alternative 3





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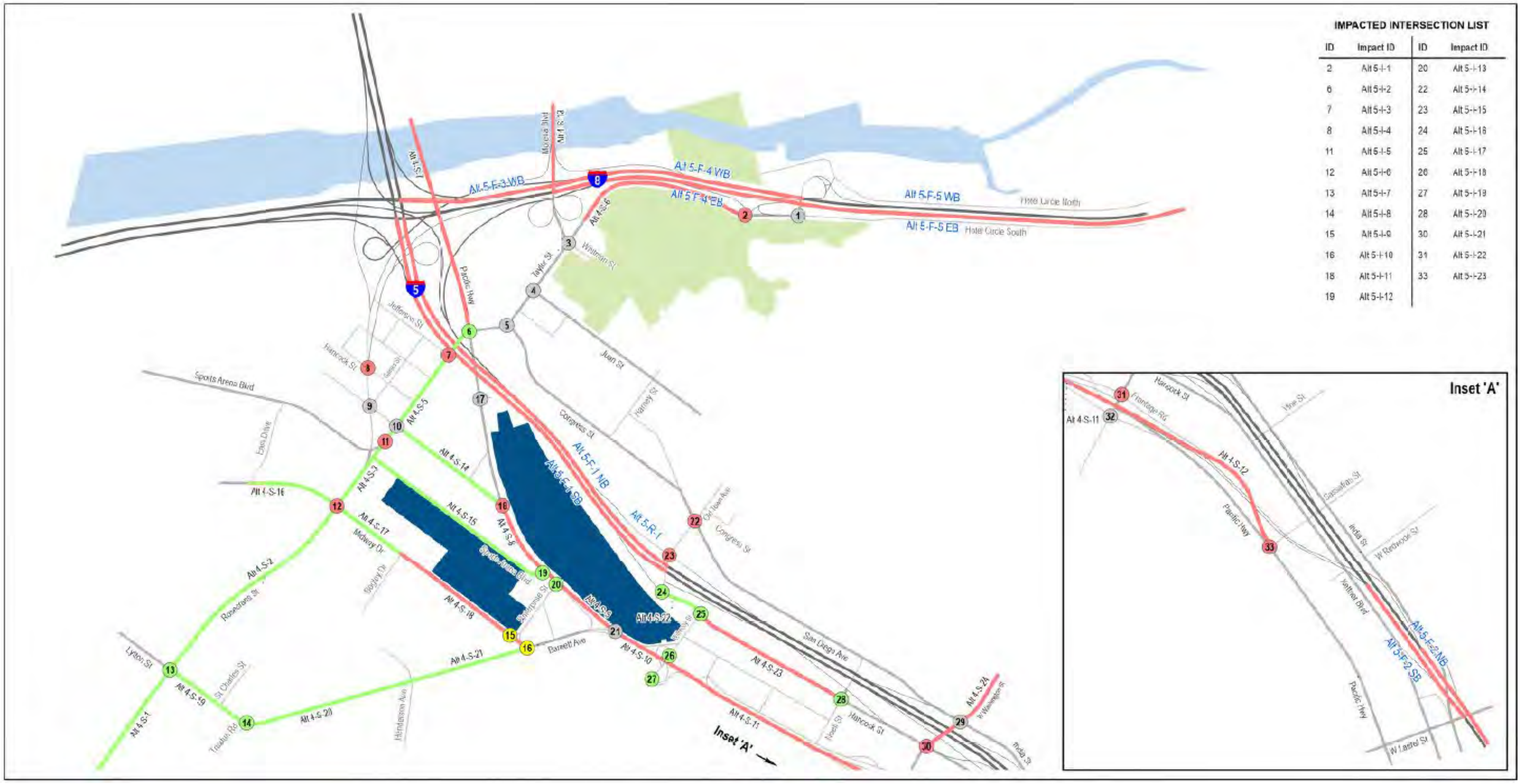
11	Alt 4-I-5	25	Alt 4-I-17
12	Alt 4-I-6	26	Alt 4-I-18
13	Alt 4-I-7	27	Alt 4-I-19
14	Alt 4-I-8	28	Alt 4-I-20
15	Alt 4-I-9	30	Alt 4-I-21
16	Alt 4-I-10	31	Alt 4-I-22
18	Alt 4-I-11	33	Alt 4-I-23
19	Alt 4-I-12		

Figure 4.4-4 Cumulative Impacts to Intersections under Alternative 4



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11	Alt 5-I-5	25	Alt 5-I-17
12	Alt 5-I-6	26	Alt 5-I-18
13	Alt 5-I-7	27	Alt 5-I-19
14	Alt 5-I-8	28	Alt 5-I-20
15	Alt 5-I-9	30	Alt 5-I-21
16	Alt 5-I-10	31	Alt 5-I-22
18	Alt 5-I-11	33	Alt 5-I-23
19	Alt 5-I-12		

Figure 4.4-5 Cumulative Impacts to Intersections under Alternative 5

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Of the 53 significant impacts under Alternative 4, 22 would be fully mitigated, 2 would be partially mitigated, and 29 impacts would remain significant and unavoidable. While Alternative 5 would result in the same total number of significant impacts to transportation facilities as Alternative 4, 23 impacts would be fully mitigated, 2 would be partially mitigated, and 28 impacts would remain significant and unavoidable.

Alternative 4 or 5 would exceed the anticipated future transportation conditions identified in the Midway-Pacific Highway, Old Town, and Uptown Community Plans. While the full buildout of Alternative 4 or 5 would not occur until 2050, based on current plans and projects and established significance criteria, the impacts to 53 transportation facilities would be significant.

The year 2050 cumulative impact analysis for Alternative 4 or 5 reflects the implementation of RTPs, projects, and programs, notably SANDAG's regional transportation improvement strategies. In addition, the inclusion of the consolidation of a transit center to OTC in combination with the potential future Central Mobility Hub connection to the San Diego International Airport, and the associated trips, has been considered. Nonetheless, based on current plans and projects and established significance criteria, the impacts to 53 transportation facilities would be significant. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to transportation within the ROI.

4.4.3 Visual Resources

4.4.3.1 Description of Geographic Study Area

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

4.4.3.2 Relevant Past, Present, and Future Actions

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

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

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

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

4.4.3.3 Cumulative Impact Analysis

Alternative 1

The analysis in Section 3.3, *Visual Resources* determined that implementation of Alternative 1 would result in no impacts to the existing visual environment at or surrounding OTC, and in fact could improve the visual environment by the removal of several dilapidated buildings at OTC. The identified cumulative actions would also be consistent with the existing visual environment as they would comply with height restrictions and/or would be consistent with the approved planning documents pertaining to visual appeal, unless otherwise exempt. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to visual resources within the ROI.

Alternatives 2 and 3

As described in Section 3.3, *Visual Resources*, implementation of Alternative 2 or 3 would result in significant impacts to visual resources. Due to the heights of the proposed buildings (240 feet), implementation of Alternative 2 or 3 would have the potential to partially obscure some of annual Independence Day Big Bay Boom Fireworks Display (Action #26) in San Diego Bay from lower elevation viewers east of OTC in the Mission Hills area. The Big Bay Boom show uses predominantly 8 inch and 10-inch diameter firework shells (Port of San Diego 2019). These shells send the fireworks a corresponding height of approximately 800 feet and 1,000 feet, respectively (Pyrotechnic Innovations, 2020). The fireworks display would be much higher than the proposed buildings, other better viewing areas are available, and the potential area of occlusion would be small and decrease with increasing elevation. However, there would be a localized, minor, and partial visual disruption and associated impact to some lower elevation viewers located in North Mission Hills.

The cumulative actions in the geographic extent, such as the Sports Arena redevelopment, The Post urban office complex, the San Diego International Airport Terminal 1 expansion, and the large commercial development projects would be developed consistent with the existing visual environment in their immediate vicinity – or increase the overall visual appeal in accordance with the measures identified in the Midway-Pacific Highway Community Plan. The identified cumulative actions would also be consistent with the existing visual environment as they would comply with height restrictions and/or would be consistent with the approved planning documents pertaining to visual appeal, unless otherwise exempt. However, the project-specific measures would not reduce the significant visual impacts from implementation of Alternative 2 or 3. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to visual resources within the ROI.

Alternatives 4 and 5

As described in Section 3.3, *Visual Resources*, implementation of Alternative 4 or 5 would result in significant impacts to visual resources. In addition, with taller buildings proposed under Alternatives 4 and 5 (350 feet) as compared to Alternatives 2 and 3 (240 feet), there would be greater potential for adverse visual impacts to some fireworks display viewers from lower elevation areas in North Mission Hills.

Building off the cumulative impact analysis for Alternatives 2 and 3, the addition of the primarily transportation-related cumulative actions would alter the visual environment. The potential actions would implement visual impact-softening measures to increase the overall visual appeal in accordance with the goals identified in the Midway-Pacific Highway Community Plan. However, the project-specific measures would not reduce the significant visual impacts from implementation of Alternative 4 or 5. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to visual resources within the ROI.

4.4.4 Land Use

4.4.4.1 Description of Geographic Study Area

The ROI for land use under Alternative 1 consists of the Midway-Pacific Highway Community Planning Area. For Alternatives 2 and 3, the ROI increases to also include the Old Town and Uptown community planning areas, San Diego International Airport, and Harbor Island. For Alternatives 4 and 5, the ROI includes the areas identified under Alternatives 2 and 3 and the land use potentially affected by the regional plans presented in Table 4.3-1.

4.4.4.2 Relevant Past, Present, and Future Actions

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

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

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

4.4.4.3 Cumulative Impact Analysis

Alternative 1

The analysis in Section 3.4, *Land Use*, determined that implementation of Alternative 1 would result in no changes to land use at or surrounding OTC. The identified cumulative actions would also be consistent with the existing land use and/or the Midway-Pacific Highway Community Plan. As envisioned in the community plan, complementary research and development businesses would continue to support the activities at the OTC, and the planned Dutch Flats Urban Village would provide opportunities for companies to locate near OTC.

In addition, the identified cumulative actions within the ROI would be consistent with land use plans and the Navy's mission at OTC under Alternative 1. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to land use within the ROI.

Alternatives 2 and 3

Implementation of Alternative 2 or 3 would be consistent with the types of current and future land use identified in the Midway-Pacific Highway, Old Town, and Uptown Community Plans, and other military, local, regional, and federal planning documents. Potential land use changes would be consistent with the broader planning goals and concepts within the San Diego General Plan, the goals of the community plans, and the identified cumulative actions. These goals and concepts include supporting critical housing needs, fostering the development of sustainable communities, and the development of residential and employment uses in proximity to transit.

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

Alternative 2 or 3 would benefit recreational resources by providing 18.0 and 13.5 acres, respectively, of recreational parkland. The Midway-Pacific Highway Community Plan identifies a parkland deficiency of 49.3 acres (62 percent) based on planned growth. Alternative 2 or 3 would reduce the deficiency and several of the reasonably foreseeable cumulative actions (e.g., The Post, Riverwalk San Diego, Port of San Diego, Coastal Rail Trail, the Pacific Highway Cycle Tracks, and Seaport San Diego) would also increase recreational resources within the ROI. For example, The Post plans to include three outdoor recreation elements (a nature walk, open space/lawn, and a linear park, which would help increase the amount of parkland. And Seaport San Diego aims to create parks, a plaza, an urban beach and other public spaces on the edge of the San Diego Waterfront.

The identified cumulative actions within the ROI would be additive towards recreation goals and complementary to the Navy's mission at OTC under Alternative 2 or 3. Due in large part to the major redevelopment actions proposed in the region (e.g., the Sports Arena redevelopment, The Post, Seaport San Diego, etc.) and in combination with Alternative 2 or 3, the overall proposed redevelopment would represent a change from existing land use and a collective recreation shortfall from the goals in the community plans. These developments may also result in greater demands on utilities, stress on public services, and impacts to transportation. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to land use within the ROI.

Alternatives 4 and 5

In addition to the analysis presented for Alternative 2 or 3, Alternative 4 or 5 would also provide additional improvements for the transportation efficiency objectives due to the consolidation of a transit center to OTC.

Alternative 4 or 5 would benefit recreational resources by providing 18 and 18.5 acres, respectively, of recreational parkland and other reasonably foreseeable cumulative actions (e.g., The Post, Riverwalk

San Diego, Port of San Diego, Coastal Rail Trail, and the Pacific Highway Cycle Tracks) would also increase recreational resources within the ROI.

When combined with the cumulative actions, Alternative 4 or 5 would also be consistent with the identified City of San Diego, Port of San Diego, San Diego International Airport, and SANDAG plans and programs, specifically providing support to the goals associated with transportation efficiency, air quality improvements, promotion of a healthy environment, strengthening of the economy, supporting thriving communities, proximity to transit, increasing the amount of available parkland, and application of a multi-modal approach to improving circulation and access throughout the community. However, while the future plans, projects, and programs have the potential to be complementary and collectively beneficial to land use over time, due in large part to the major redevelopment and transportation projects proposed in the region and in combination with Alternative 4 or 5, the overall proposed redevelopment would represent a change from existing land use and a recreation shortfall from the goals in the community plans. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to land use within the ROI.

4.4.5 Socioeconomics

4.4.5.1 Description of Geographic Study Area

For all Proposed Action Alternatives, the ROI for socioeconomics corresponds to San Diego County with a focus on the project area and surrounding census tracts (as defined in Section 3.5, *Socioeconomics*).

Relevant Past, Present, and Future Actions

Table 4.3-2 identifies the actions that might cumulatively affect socioeconomics within the ROI. The actions include military and non-military construction and development projects. The City of San Diego General Plan and Community Plans do not in and of themselves spur population or economic growth, but rather they provide a framework to plan for and manage growth. The SANDAG 2050 Regional Transportation Plan did indicate a significant impact related to population and housing as transportation network improvements identified in the 2050 RTP would displace populations and businesses.

4.4.5.2 Cumulative Impact Analysis

Alternative 1

Implementation of Alternative 1 would result in short-term beneficial socioeconomic impacts from construction activity, employment, and spending. The continuation of operations would not spur additional population growth, employment, economic activity, housing, or government revenue. Less than significant impacts would occur.

The construction actions listed in Table 4.3-2 would, to varying degrees, also result in a positive economic impact to San Diego County. These impacts would tend to be beneficial to jobs, labor income, GCP, (a measure of the value of goods and services produced in a year), and government revenue and would tend to generate direct beneficial impacts in the construction industry, indirect beneficial impacts in industries that sell construction supplies, and induced beneficial impacts in service industries. Long-term, The Post development would increase jobs and revenue in the ROI, resulting in a positive impact to socioeconomics. The identified community plans would continue to provide a framework to stimulate future socioeconomic benefits.

The proportions of the ROI's population that are Hispanic or Latino (17.6 percent) and Asian (6.2 percent) are substantially smaller than at the state, county, or city level, while the proportion of Black or African Americans in the population (6.8 percent) is slightly larger. The implementation of Alternative 1 in combination with the cumulative actions is not anticipated to noticeably change existing population demographics. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to socioeconomic resources within the ROI.

Alternatives 2 and 3

Construction activity associated with Alternative 2 or 3 would result in greater short-term beneficial impacts to socioeconomic resources as compared to Alternative 1. Post-construction, the proposed development of residential units and commercial space would have beneficial impacts to population, economic activity, housing, and government revenue. While the additional population would increase demands on public services (see Section 3.10, *Public Services*), it would also concurrently add to GCP, government revenue, and overall economic activity. Less than significant impacts would occur.

There would be no anticipated adverse effect to the affordability of housing county-wide (see the Socioeconomic Study, Appendix E, Section 4.2.3.3) under the Proposed Action Alternatives. The ROI currently has a smaller minority population percentage than the city and a greater income than the city; thus, gentrification is not a potential issue.

In addition to actions listed under Alternative 1, the Hacienda Heights Apartments, the Sports Arena redevelopment, the Riverwalk, the community plans, the UCSD Long Range Development Plan for the Hillcrest Campus, and Seaport San Diego endeavor to add to housing supply and/or stimulate additional short- and long-term economic activity. In addition, through the Sports Arena redevelopment and Riverwalk project, there would be an increase in the supply of affordable housing in the ROI. Table 4.4-2 summarizes the potential increase in housing units within the ROI with Alternative 2 or 3 in combination with the identified major cumulative housing projects.

Table 4.4-2 Projected Future Housing Units with Alternative 2 or 3

Action	*Projected Future Units*	*Projected Affordable Units*
Midway-Pacific Highway Community Plan	10,155	N/A
Old Town Community Plan	935	N/A
Uptown Community Plan	11,600	N/A
Hacienda Heights	14	N/A
Sports Arena Redevelopment	1,442-2,100	Included but undefined
UCSD Hillcrest Campus	1,000	N/A
Riverwalk	4,300	400
Alternative 2	*6,600*	*TBD*
Total with Alternative 2	**34,604+**	**400+**
Alternative 3	*4,400*	*TBD*
Total with Alternative 3	**32,404+**	**400+**

Legend: N/A = not applicable; TBD = to be determined.

The EIR prepared for the SANDAG 2050 RTP (SANDAG, 2011b) determined there would be a significant and unavoidable impact related to displacement of homes and businesses with implementation of the plan. To mitigate for this impact, as part of the 2050 Regional Transportation Plan, implementing agencies will develop design strategies for application at the project level to avoid or reduce the temporary or permanent acquisition of residential and non-residential property. For projects with the potential to displace homes and/or businesses, SANDAG shall, and other implementing agencies can and should evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses.

Alternative 2 or 3 and other actions identified in Table 4.4-1 would not result in displacement of homes or businesses and would increase the available housing units within the ROI, resulting in an indirect beneficial impact to housing units in the ROI. In doing so, the Alternatives 2 or 3 would offset a fraction of the significant impacts identified in the 2050 Regional Transportation Plan. Despite this beneficial impact from Alternatives 2 or 3, cumulatively, there would be a potential significant cumulative impact related to displacement at the regional level. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to socioeconomic resources within the ROI.

Alternatives 4 and 5

As presented above for Alternatives 2 and 3, implementation of Alternative 4 or 5 would result in less than significant impacts to socioeconomics. Alternative 4 or 5 would have the highest level of beneficial economic impact and no anticipated impact to population demographics, housing units, or housing affordability. Table 4.4-3 summarizes the potential increase in housing units within the ROI under Alternative 4 or 5 in combination with the identified major cumulative housing projects.

Table 4.4-3 Projected Future Housing Units with Alternatives 4 and 5

Action	***Projected Future Units***	***Projected Affordable Units***
Midway-Pacific Highway Community Plan	10,155	N/A
Old Town Community Plan	935	N/A
Uptown Community Plan	11,600	N/A
Hacienda Heights	14	N/A
Sports Arena Redevelopment	undefined	undefined
UCSD Hillcrest Campus	1,000	N/A
Riverwalk	4,300	400
Alternative 4	*10,000*	*TBD*
Total with Alternative 4	**38,004+**	**400+**
Alternative 5	*8,000*	*TBD*
Total with Alternative 5	**36,004+**	**400+**

Legend: N/A = not applicable; TBD = to be determined.

Alternative 4 or 5 and other actions identified in Table 4.4-2 would not result in displacement of homes or businesses and would increase the available housing units within the ROI, resulting in an indirect beneficial impact to housing units in the ROI. In doing so, the Alternatives 4 or 5 would offset a fraction of the significant impacts identified in the 2050 Regional Transportation Plan. Despite this beneficial impact from Alternatives 4 or 5, cumulatively, there would be a potential significant cumulative impact related to displacement at the regional level. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to socioeconomic resources within the ROI.

4.4.6 Cultural Resources

4.4.6.1 Description of Geographic Study Area

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

4.4.6.2 Relevant Past, Present, and Future Actions

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

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

4.4.6.3 Cumulative Impact Analysis

Alternative 1

Implementation of Alternative 1 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With implementation of these measures, Alternative 1 would result in less than significant impacts under NEPA.

The Midway-Pacific Highway Community Plan (City of San Diego, 2018a) Historic Preservation Element contains specific goals and recommendations to address the history and cultural resources unique to the Midway-Pacific Highway area and to encourage appreciation of the community's history and culture. The Midway-Pacific Highway area is home to two NRHP properties. These include the MCRD Historic District, listed in the NRHP in 1991, and the Mission Brewery, listed in the NRHP in 1989. If cumulative actions are located within or near historically significant buildings, constructing such projects may damage or alter those resources and diminish their integrity.

None of the cumulative actions would directly overlap with cultural resource impacts from Alternative 1 because none of the other reasonably foreseeable actions would impact the Consolidated Aircraft Plant 2 Historic District. While the demolition of the Consolidated Aircraft Plant 2 Historic District under Alternative 1 would remove the only remaining example of this type of historic resource within San Diego County, the Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with SHPO. The Navy will also continue to manage cultural resources under their jurisdiction in accordance with applicable federal law and Navy policy.

The listed past, present, and reasonably foreseeable actions with the potential for significant impacts to cultural resources have been or will be evaluated under NEPA, including consultations with regulatory agencies and stakeholders, such as the City of San Diego, Save our Heritage Organization, SHPO, and tribal governments, and the subsequent implementation of mitigation measures, as warranted.

Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to cultural resources within the ROI.

Alternatives 2 and 3

Implementation of Alternative 2 or 3 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Implementation of Alternative 2 or 3 would also introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of the Proposed Action area and extensively alter their setting. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With implementation of these measures, Alternative 2 or 3 would result in less than significant impacts under NEPA.

Given the history and cultural importance of the ROI, notably the Old Town San Diego State Historic Park, a NRHP-listed historic district, and the NRHP-eligible Presidio Park and Casa de Lopez, many of the identified present and foreseeable future cumulative actions would have the potential to affect historic properties. In addition to the cultural resource-related identification and preservation measures contained in the Midway-Pacific Highway Community Plan (summarized above for Alternative 1), the cultural measures contained in the Old Town Community Plan would also be relevant for the identified cumulative actions. If cumulative actions are located within or near historically significant buildings, constructing such projects may damage or alter those resources and diminish their integrity.

As noted under Alternative 1, none of the other reasonably foreseeable actions would impact the Consolidated Aircraft Plant 2 Historic District. While the demolition of the Consolidated Aircraft Plant 2 Historic District would remove the only remaining example of this type of historic resource within San Diego County, the Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with SHPO. The Navy will also continue to manage cultural resources under their jurisdiction in accordance with applicable federal law and Navy policy.

Impacts from some of the listed past, present, and reasonably foreseeable actions could overlap with impacts to the 19 historic properties whose setting would be altered by Alternative 2 or 3. However, the listed actions with the potential for significant impacts to cultural resources have been or will be evaluated under NEPA, including consultations with regulatory agencies and stakeholders, such as the City of San Diego, Save our Heritage Organization, SHPO, and tribal governments, and the subsequent implementation of mitigation measures, as warranted. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to cultural resources within the ROI.

Alternatives 4 and 5

Implementation of Alternative 4 or 5 would result in extensive physical damage to the Consolidated Aircraft Plant 2 Historic District, resulting in the loss of its NRHP eligibility. Implementation of Alternative 4 or 5 would also introduce visual elements that are out of character for 19 historic properties (two of which are National Historic Landmarks) located within 0.5 mile of the Proposed Action area and extensively alter their setting. The Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with SHPO following the process outlined in the Naval Base Point Loma Programmatic Agreement. With implementation of these measures, Alternative 4 or 5 would result in less than significant impacts under NEPA.

Cumulatively, the impacts to cultural resources would be similar to those described for Alternatives 2 and 3. None of the other reasonably foreseeable actions would impact the Consolidated Aircraft Plant 2 Historic District. While the demolition of the Consolidated Aircraft Plant 2 Historic District would remove the only remaining example of this type of historic resource within San Diego County, the Navy will develop measures to minimize or mitigate adverse effects on historic properties in consultation with SHPO. The Navy will also continue to manage cultural resources under their jurisdiction in accordance with applicable federal law and Navy policy.

Impacts from some of the listed past, present, and reasonably foreseeable actions could overlap with impacts to the 19 historic properties whose setting would be altered by Alternative 4 or 5. However, the listed actions with the potential for significant impacts to cultural resources have been or will be evaluated under NEPA, including consultations with regulatory agencies and stakeholders, such as the City of San Diego, Save our Heritage Organization, SHPO, and tribal governments, and the subsequent implementation of mitigation measures, as warranted. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to cultural resources within the ROI.

4.4.7 Hazardous Materials and Wastes

4.4.7.1 Description of Geographic Study Area

The ROI for hazardous materials and hazardous and solid wastes corresponds to OTC, adjacent properties, and regional waste disposal/recycling locations. This ROI thus considers the use of hazardous materials and wastes at and adjacent to OTC, existing IR sites at OTC, known off-OTC contamination/remediation sites adjacent to OTC, and local landfills and recycling locations that would serve OTC and the identified cumulative actions.

4.4.7.2 Relevant Past, Present, and Future Actions

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

Examples include actions at the Port of San Diego, MCRD San Diego, the San Diego International Airport Development Plan, the Navy Broadway Complex/Manchester Gateway Development Project, The Post, and the Sports Arena redevelopment. Other actions include the Hacienda Heights Apartments project and the construction of three Liberty Station hotels. Other actions that have a potential to affect this resource area are related to investigations/remediation of existing contamination sites. These include remediation of OTC IR Sites 1, 10, and 11 and suspected areas of PFAS contamination, as well as the cleanup of two nearby off-installation hazardous wastes sites.

4.4.7.3 Cumulative Impact Analysis

Alternative 1

Prior to demolition, contractors would survey for lead, asbestos, and PCBs. If present, appropriately licensed contractors would properly isolate, remove, and dispose of the materials. To limit the amount of waste sent to landfills, the contractor would prepare a Solid Waste Management Plan to detail the types and quantities of waste expected to be generated; actions that would be taken to divert construction and demolition waste stream from landfills; a list of the specific waste materials that would be salvaged for resale, reuse, or recycling; and identification and justification for materials that cannot be reused/recycled. Implementation of Alternative 1 would not interfere with ongoing remediation activities at OTC or at nearby locations. Hazardous materials and hazardous wastes would be managed in accordance with all applicable regulations.

The action proponents associated with the identified cumulative actions in Table 4.3-2 would also abide by regulations applicable to the use, management, and disposal of hazardous materials and wastes. This would include performing pre-construction surveys for hazardous materials, and then performing any required abatement. If construction activities uncover potential contaminated material, the action proponent would follow established federal, state, and local regulations.

The Miramar Landfill, the only active municipal landfill in the City of San Diego, is expected to reach capacity by 2030. The Miramar Landfill is located on Marine Corps Air Station Miramar, is leased to the City of San Diego, and the City of San Diego is working with the Navy and Marine Corps to extend the life of the landfill. In addition, there are two privately-owned landfills in San Diego County: the Sycamore Landfill and the East Otay Mesa Landfill. Republic Services owns and maintains both of these landfills and they are expected to operate for at least 40 more years (City of San Diego, 2020g).

As discussed in Section 3.7, *Hazardous Materials and Waste*, under Alternative 1, it is estimated that the solid waste (construction and demolition debris and municipal solid waste) generated would comprise approximately 1.51 percent of total solid waste quantity disposed to the Miramar Landfill in a given year, assuming all solid waste would be generated during a single year. In reality, the volume of solid waste generated from Alternative 1 would occur over the course of multiple years, thereby dispersing the landfill contributions over several years.

The past, present, and reasonably foreseeable actions listed in Table 4.3-2 would also contribute construction and demolition debris and municipal solid waste to regional landfills. As standard practice, construction and demolition waste would be diverted from landfills through reuse or recycling. Waste would either be segregated and recycled at a certified facility or disposed of (for mixed or non-segregated waste) at a certified recycling facility. The City of San Diego requires a minimum 65 percent diversion rate for construction and demolition debris and a 50 percent recycling rate for municipal solid waste.

In addition to the additional capacity provided by the Sycamore and East Otay Mesa Landfills, additional landfill capacity is expected to be developed in the region to meet future demand throughout the time frame (2050) considered in this analysis. For cumulative actions, separate and specific environmental reviews would address the expansion of existing facilities and construction of new facilities. Because local laws require diversion/recycling of solid waste, landfill capacity is anticipated to be sufficient for the combined demand of the cumulative actions and Alternative 1. Implementation of Alternative 1 would not interfere with ongoing remediation activities by the Navy and others.

Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts from hazardous materials or wastes within the ROI.

Alternatives 2 and 3

Under Alternative 2 or 3, the cumulative quantity of hazardous materials used, hazardous waste generated, and municipal waste generated would be greater than under Alternative 1, but still less than significant. Solid wastes generated under Alternative 2 would comprise 2.1 percent of the total solid waste quantity disposed of at the Miramar Landfill in a given year, assuming all OTC solid waste would be generated during a single year (see Section 3.7, *Hazardous Materials and Waste*). Similarly, Alternative 3 wastes would comprise 1.5 percent of the total solid waste disposed of at the Miramar Landfill in a given year. The inclusion of actions beyond the immediate areas surrounding OTC would result in a greater cumulative use, management, and generation of hazardous materials and wastes. In addition, there would be an increase in waste contributions to landfills. As discussed under Alternative 1, additional local landfill capacity is anticipated to be sufficient for the combined demand of the cumulative actions and Alternative 2 or 3. Implementation of Alternative 2 or 3 or the cumulative actions would not interfere with ongoing remediation activities by the Navy or others.

Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts from hazardous materials or wastes within the ROI.

Alternatives 4 and 5

Under Alternative 4 or 5, the cumulative quantity of hazardous materials used, hazardous waste generated, and municipal waste generated would be greater than under Alternative 2 or 3, but still less than significant. Under Alternative 4 wastes generated would comprise 2.91 percent of the total solid waste quantity disposed of at the Miramar Landfill in a given year, assuming all OTC solid waste would be generated during a single year. Similarly, Alternative 5 wastes would comprise 2.32 percent of the total solid waste disposed of at the Miramar Landfill in a given year. The cumulative effect of the primarily regional transportation projects, plans, and programs with Alternative 4 or 5 (see Table 4.3-2) would not be substantially different than described above for Alternatives 2 and 3. As discussed under Alternative 1, additional local landfill capacity is anticipated to be sufficient for the combined demand of the cumulative actions as well as Alternative 4 or 5. Implementation of Alternative 4 or 5 or the cumulative actions would not interfere with ongoing remediation activities by the Navy or others.

Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts from hazardous materials or wastes within the ROI.

4.4.8 Public Health and Safety

4.4.8.1 Description of Geographic Study Area

The ROI for public health and safety is generally defined as the existing OTC installation boundaries but includes off-installation areas for some resource areas. An example of off-installation influence would be if there were impacts to air quality, airspace intrusion, noise, traffic (air and ground), wastewater, or migration of contaminants. In addition, Alternatives 4 and 5 include the consolidation of a transit center to OTC, which extends the ROI for public health and safety, particularly when considered in combination with the Central Mobility Hub Connection to San Diego International Airport project.

4.4.8.2 Relevant Past, Present, and Future Actions

Table 4.3-2 identifies those past, present, and reasonably foreseeable actions that have the most potential to contribute to cumulative public health and safety effects when combined with the Proposed Action Alternatives. These actions include those that have the potential to be affected by or to affect emergency services, air quality, aircraft safety, geologic hazards, electromagnetic radiation energy, hazardous materials and wastes, noise, security and force protection, and protection of children. Due to the urban setting of the Proposed Action Alternatives, wildfire risk is not considered in this section. Because of the large scope of concerns considered in this resource area, most of the identified cumulative actions have the potential to contribute to cumulative public health and safety impacts.

4.4.8.3 Cumulative Impact Analysis

Alternative 1

Implementation of Alternative 1 would occur within the boundaries of OTC. Because OTC is a secure facility and members of the public are not permitted on-site without an escort, there would be a negligible potential impact to the public health and safety within the boundaries of OTC. However, as presented in Section 3.7, *Hazardous Materials and Wastes*, a significant impact to protection of children was identified due to safety risks associated with increased traffic during construction. In addition, planning and environmental impact documents for cumulative actions identified numerous significant impacts to environmental justice and protection of children related to population and housing (displacement), utilities, visual resources, recreation, community character and cohesion, noise and vibration, and HAP emissions (see Section 4.4.9). The identified cumulative actions would generate air emissions, noise, and hazardous materials and wastes. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to public health and safety within the ROI.

Alternatives 2 and 3

Potential impacts to the public within the area where NAVWAR facilities would be developed on OTC under Alternative 2 or 3 would be negligible, as public access to the site would be controlled and access/egress of workers, equipment, etc. would follow established protocols and procedures. Potential impacts from the mixed-use public-private development portions constructed on OTC under Alternative 2 or 3 would come from the introduction of more people within the OTC boundaries (utilizing residential, office, dining, and retail space). The potential for impacts to aircraft safety compatibility would be addressed by a review of the project by the FAA and compliance with FAA recommendations.

Under Alternative 2 or 3 the same cumulative resource impacts from other actions as presented under Alternative 1 would occur. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to public health and safety within the ROI.

Alternatives 4 and 5

In addition to the cumulative impacts described above for Alternatives 2 and 3, additional potential impacts from the public-private portions of OTC and the transit center under Alternative 4 or 5 would come from the introduction of more people within and adjacent to the OTC boundaries (utilizing residential, office, dining, retail space, and the transit center). This would include having higher public use, including by children and elderly, than before.

Under Alternative 4 or 5 the same cumulative resource impacts from other actions as presented under Alternatives 2 and 3 would occur. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to public health and safety within the ROI.

4.4.9 Environmental Justice and Protection of Children

4.4.9.1 Description of Geographic Study Area

The ROI for environmental justice and protection of children corresponds to San Diego County with a focus on the project area and surrounding census tracts (as defined in Section 3.5, *Socioeconomics*, and as illustrated on Figure 3.9-1 and Figure 3.9-2).

4.4.9.2 Relevant Past, Present, and Future Actions

Significant impacts to environmental justice populations in the ROI were identified in association with the refined build alternative of the Mid-Coast Corridor project (Action #23 in Table 4.3-2), which was adopted in the associated ROD (SANDAG, 2014b); these impacts are related to traffic, transit, parking, air quality, and noise and vibration. The SANDAG 2050 RTP Final EIR (SANDAG 2011c) identified numerous significant environmental justice impacts related to population and housing (displacement), utilities, visual resources, recreation, community character and cohesion, air quality, cultural resources, and noise and vibration.

4.4.9.3 Cumulative Impact Analysis

Alternative 1

Adverse impacts to low-income and minority populations related to HAP emissions and noise were identified in Section 3.9, *Environmental Justice and Protection of Children*. A significant impact to environmental justice was identified in relation to transportation as increased traffic and travel times would disproportionately affect residents in low-income and minority areas in the ROI. A significant impact to protection of children was identified due to safety risks associated with increased traffic during construction.

Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to environmental justice and protection of children within the ROI.

Alternatives 2 and 3

Under Alternative 2 or 3, adverse impacts to low-income and minority populations related to visual resources, HAP emissions, and noise were identified in Section 3.9, *Environmental Justice and Protection of Children.* A significant impact on environmental justice was also identified in relation to transportation, as increased traffic and travel times would disproportionately affect low-income and minority residents within the ROI. A significant impact on protection of children was identified due to safety risks associated with increased traffic during both construction and operations.

Planning and environmental impact documents for cumulative actions identified numerous significant impacts to environmental justice (e.g., SANDAG 2050 Regional Transportation Plan [SANDAG, 2001b, 2011c]). Alternative 2 or 3 when combined with cumulative actions would generate significant cumulative impacts to environmental justice and protection of children related to population and housing (displacement), utilities, visual resources, recreation, community character and cohesion, noise and vibration, transportation, and HAP emissions.

Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to environmental justice and protection of children within the ROI.

Alternatives 4 and 5

Under Alternative 4 or 5, adverse impacts to low-income and minority populations related to visual resources, HAP emissions, and noise were identified in Section 3.9, *Environmental Justice and Protection of Children.* A significant impact to environmental justice was also identified in relation to transportation, as increased traffic and travel times would disproportionately affect low-income and minority areas within the ROI. A significant impact to protection of children was identified due to safety risks associated with increased traffic during both construction and operations.

Planning and environmental impact documents for cumulative actions identified numerous significant impacts to environmental justice. Alternative 4 or 5 combined with cumulative actions would generate significant cumulative impacts to environmental justice and protection of children related to population and housing (displacement), utilities, visual resources, recreation, community character and cohesion, noise and vibration, transportation, and HAP emissions.

Therefore, implementation of Alternatives 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to environmental justice and protection of children within the ROI.

4.4.10 Public Services

4.4.10.1 Description of Geographic Study Area

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

4.4.10.2 Relevant Past, Present, and Future Actions

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

The Navy Broadway Complex/Manchester Gateway Development Project, the Hacienda Heights Apartments, and the UCSD Long Range Development Plan for the Hillcrest Campus would be expected to increase the permanent population in the ROI and therefore would have effects on public services. The additional population would likely require additional personnel at public service agencies to maintain current levels of service. These actions would also generate government revenue that could be used to fund public services.

Development plans, such as the San Diego General Plan and the Midway-Pacific Highway Community Plan, do not in and of themselves spur population growth, but rather aim to ensure that adequate services and infrastructure are provided to support future growth. As described in the Midway-Pacific Highway Plan, parks, public spaces, and schools are vital to support a growing population (City of San Diego, 2018a).

4.4.10.3 Cumulative Impact Analysis

Alternative 1

Under Alternative 1, there would be no increase in public service demand because there would be no associated change in operations at OTC. There would be no permanent population increase and no additional public service agency personnel would be required to maintain current levels of service. No impacts would occur.

Overall, the identified cumulative actions would increase the demand for public services within the ROI. While these actions would result in an increase in demand, these and other sources are likely to generate tax revenue and development impact fees that could be used to fund any necessary increases in public services to fulfill the public service needs of the growing population. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to public services within the ROI.

Alternatives 2 and 3

As presented in Section 3.10, *Public Services*, implementation of Alternative 2 and, to a lesser extent, Alternative 3 would lead to a permanent increase in demand for public services within the ROI. The permanent population increase at OTC would increase the number of teachers, police officers, and fire/EMT personnel required to maintain current levels of public services and response times. The additional personnel requirements would be funded by tax revenue generated by the alternatives, which combined for city and county governments would equal $15.9 million per year for Alternative 2 and $10.6 million per year for Alternative 3. These funds would equal $398,000 per additional required public service personnel for Alternative 2 and $408,000 per year per additional required personnel for Alternative 3. Additional state revenue of $38 million per year for Alternative 2 and $25 million per year for Alternative 3, along with development impact fees would cover additional potential expenses such as infrastructure requirements. Less than significant impacts would occur.

Cumulatively, there would be additional actions that would result in a population increase within the ROI, resulting in an overall increased demand on public services. While the local increase in demand for public services could be met through project-specific increases in tax revenue to help ensure sufficient public services and associated response times are available, revenue associated with these projects may be small relative to the proposed alternatives, as those projects would not have as large of a commercial component.

The relevant community plans provide direction on the design of spaces that can help deter unlawful behavior and building design measures can reduce the demands on emergency service providers and help to make the community safe. However, these factors would not alone reduce the need for adequate police, fire, and rescue service capabilities and additional requirements for public services would be substantial. Tax revenue generation, city and state development fees, and community design would provide support and sufficient funding for public service agencies to meet the increased demand for public services. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to public services within the ROI.

Alternatives 4 and 5

As presented in Section 3.10, *Public Services*, implementation of Alternative 4 and, to a lesser extent, Alternative 5 would lead to a permanent increase in demand for public services within the ROI. The permanent population increase at OTC would increase the number of teachers, police officers, and fire/emergency medical technician personnel required to maintain current levels of public services and response times. The presence of a transportation center would also increase the amount of private security and presence of emergency responders. The additional personnel requirements would be funded by tax revenue generated by the alternatives, which combined for city and county governments would equal $24.1 million per year for Alternative 4 and $19.3 million per year for Alternative 5. These funds would equal $389,000 per additional required public service personnel for Alternative 4 and $394,000 per year per additional required personnel for Alternative 5. Additional state revenue of $57 million per year for Alternative 4 and $46 million per year for Alternative 3, along with development impact fees would cover additional potential expenses such as infrastructure requirements. Less than significant impacts would occur.

Cumulatively, the impacts to public services would be similar to those presented for Alternatives 2 and 3. More transportation-related development would require an increase in private security and/or public law enforcement personnel, resulting in a further increase in public services in the ROI. Tax revenue generation, city and state development fees, and community design would provide support and sufficient funding for public service agencies to meet the increased demand for public services. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to public services within the ROI.

4.4.11 Infrastructure

4.4.11.1 Description of Geographic Study Area

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

4.4.11.2 Relevant Past, Present, and Future Actions

Table 4.3-2 identifies those past, present, and reasonably foreseeable actions that have the most potential to contribute to cumulative infrastructure effects. The identified actions would be expected to incrementally increase demand for most public utilities within the ROI, such as: water, sewer, solid waste, electricity, and natural gas. The identified community and regional plans/programs provide a framework and recommended measures and guidelines to help ensure that future development would have sufficient infrastructure supply to support development demands, but there are no guarantees that future actions would meet collective infrastructure demands.

4.4.11.3 Cumulative Impact Analysis

Alternative 1

Under Alternative 1, water, sewer, electrical, and natural gas use would increase slightly. Implementation of Alternative 1 would also result in more energy-efficient structures at OTC. Alternative 1 would not substantially increase demand for public utilities or use of public infrastructure. Less than significant impacts would occur.

Overall, the identified cumulative actions would increase the demand for water, sewer, electrical, and natural gas use within the ROI. While these actions would overall result in an increase in demand, they are most likely to generate utility revenue that could be used to fund any necessary infrastructure upgrades and support maintenance of service to fulfill existing and projected utility obligations.

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

Energy efficiency, water conservation, and waste reduction are major elements of the Midway-Pacific Highway Community Plan. Section 4.8 of the Plan identifies several sustainable design concepts to increase energy and water efficiency, increase on-site energy generation, and reduce waste generation (City of San Diego, 2018a). Thus, overall, implementation of Alternative 1 would occur in an area with cumulative actions, plans, and programs committed to planning for the smart and efficient use of infrastructure within the ROI. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to infrastructure within the ROI.

Alternatives 2 and 3

Alternative 2 and, to a lesser extent, Alternative 3 would lead to a permanent increase in demand on public utilities within the ROI. Under Alternative 2 or 3, the projected increase in utility demands are within forecasts for utilities in various planning documents, including the San Diego Urban Water Management Plan, California Energy Demand Forecast, and the San Diego County Integrated Waste Management Plan. With coordination and implementation of sustainable design measures and/or facility upgrade forecasts, it is anticipated that supply and capacity would be able to meet the increased demand generated by Alternative 2 or 3. Less than significant impacts would occur.

Cumulatively, the impacts to infrastructure associated with Alternative 2 or 3 would be greater than Alternative 1. The potential increase in residential units and office space would result in a greater demand on all utilities. While it is anticipated that as redevelopment actions occur within the ROI, older, energy-inefficient buildings would be replaced with sustainable energy-efficient structures, the overall demand would increase. The implementation of infrastructure-related measures to increase renewable energy, conserve water, etc., as outlined in community plans would help reduce the impact of growth and development on infrastructure within the ROI. In addition, the proposed San Diego International Airport Development Plan includes sustainable design elements to minimize infrastructure demand. Nonetheless, the overall increase in residential units and office space would, in combination with Alternative 2 or 3, stress existing infrastructure and exceed future infrastructure goals as defined in the community plans. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to infrastructure within the ROI.

Alternatives 4 and 5

Alternative 4 and, to a lesser extent, Alternative 5 would further increase infrastructure demand in the ROI beyond the projected increases associated with Alternative 2 or 3. Landfill space, electrical, and natural gas supply capacity are anticipated to be sufficient to the address increased demand of Alternative 4 or 5. With coordination and implementation of sustainable design measures and/or facility upgrade forecasts, it is anticipated that supply and capacity would be able to meet the increased demand generated by Alternative 4 or 5. Less than significant impacts would occur.

Cumulatively, the impacts to infrastructure would be similar to those presented for Alternatives 2 and 3 above. The Central Mobility Hub Connection to San Diego International Airport would require additional energy to operate, resulting in an increase in energy demand in the ROI. The implementation of infrastructure-related measures to increase renewable energy, conserve water, etc., as outlined in community plans and regional plans and programs (e.g., SANDAG's regional transportation plans and programs) would help reduce the impact of growth and development on infrastructure within the ROI. Nonetheless, the overall increase in residential units and office space would, in combination with Alternative 4 or 5, stress existing infrastructure and exceed future infrastructure goals as defined in the community plans. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to infrastructure within the ROI.

4.4.12 Airspace

4.4.12.1 Description of Geographic Study Area

The ROI for airspace considerations is the area under the part 77 imaginary surfaces for San Diego International Airport's runway 9-27, which runs east-west and is located between downtown San Diego and Point Loma. This includes the extended approach and departure corridors (primarily to the east and west, along the extended runway centerline), and the area beneath the horizontal and conical surfaces (which are primarily to the north and south of the runway as far as 14,000 feet from the runway). In addition to the approach and departure corridors, this area encompasses the northwestern part of downtown, parts of San Diego Bay, northern Point Loma, Mission Hills, Midway, U.S. MCRD, and Liberty Station.

In this area, the air traffic is primarily going to/from the San Diego International Airport and includes helicopters in the downtown San Diego area. Air traffic from Naval Air Station North Island is deconflicted from this area by long-standing procedures.

4.4.12.2 Relevant Past, Present, and Future Actions

Table 4.3-2 identified cumulative actions associated with the San Diego International Airport Development Plan (Action #29 A-G) that would potentially impact airspace.

4.4.12.3 Cumulative Impact Analysis

The analysis in Section 3.12, *Airspace* is based on the proposed building heights under each of the Proposed Action Alternatives.

Alternative 1

Alternative 1 would result in no impacts to airspace because redevelopment of NAVWAR facilities would be consistent with existing building heights at OTC. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to airspace within the ROI.

Alternatives 2 and 3

Implementation of Alternative 2 or 3 would result in a less than significant impact to airspace. Redevelopment of OTC under Alternative 2 or 3 would trigger review of the specific proposals by the FAA under 14 CFR part 77. This review would determine whether there is a conflict with airspace that would violate flight safety. A conflict would ultimately lead to either approval or rejection of the specific development proposal. If a conflict is identified, the Navy and FAA would coordinate to refine the redevelopment design to find a solution that does not have an adverse airspace safety impact.

The proposed projects identified in the Airport Development Plan (Action #29A-G) have a potential to contribute to cumulative airspace impacts in the region. The majority of the proposed projects are infrastructure and facility improvements that would not affect aircraft activities or airspace. The proposed new Taxiway A project would have effect on aircraft activities at the airport. This project is intended to improve aircraft taxiing and parking activities at the airport. However, it would not affect the number of aircraft arrivals and departures at the airport and would not require changes to airspace designations at or surrounding the airport.

The only aircraft activity at the airport with the potential to overfly the OTC area is the right turn on departure of general aviation aircraft from runway 27. The new Taxiway A would not affect the amount of general aviation aircraft making this right turn, nor affect any air traffic control procedures for this activity. Furthermore, the FAA review process identified above would only allow development proposals that do not have an adverse airspace safety impact. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to airspace within the ROI.

Alternatives 4 and 5

Implementation of Alternative 4 or 5 would result in a less than significant impact to airspace. The cumulative impact analysis for Alternative 4 or 5 is similar to the analysis presented above for Alternatives 2 and 3. The main difference is that proposed building heights are a maximum of 240 feet under Alternatives 2 and 3 and a maximum of 350 feet under Alternatives 4 and 5. Because proposed building heights under Alternatives 4 and 5 are higher than those proposed under Alternative 2 or 3, it is more likely that that FAA review could identify potential conflicts that would need to be resolved prior to development approval. If a conflict is identified, the Navy and FAA would coordinate to refine the redevelopment design to find a solution that would not have an adverse airspace safety impact. Thus, cumulative impacts under Alternative 4 or 5 would be identical to those identified for Alternative 2 or 3. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to airspace within the ROI.

4.4.13 Noise

4.4.13.1 Description of Geographic Study Area

The ROI for the analysis of noise impacts is defined as the area within 0.5 mile of OTC because noise levels from construction activities at the proposed project site (which would be higher than noise levels from operations onsite under any of the project alternatives) would dissipate to ambient levels within this distance. In addition, this area includes the local streets where changes to traffic volumes would have the potential to affect traffic noise levels.

The ROI contains noise sensitive land uses such as schools, places of worship, housing, childcare facilities, and hospitals. The nearest noise sensitive locations to OTC are:

- Veteran's Village Transitional Housing adjacent to OTC Site 1 to the east.
- Healthcare facility adjacent to OTC Site 2 to the east.
- Dewey Elementary School and a residential neighborhood approximately 1,000 feet southwest of OTC Site 2.
- Several places of worship and a residential neighborhood beginning 300 feet to the northeast of OTC Site 1 beyond Interstate 5.

Aircraft activity at San Diego International Airport and vehicle traffic along Interstate 5 and city streets represent the primary sources of noise within the ROI. Noise levels within the ROI typically are in the 60 to 63 dB CNEL range, as depicted on Figure 3.13-2. Cumulative noise impacts could generally arise from past, present, or reasonably foreseeable actions affecting additional noise sensitive land uses in the vicinity of OTC or generating noise that could increase impacts to noise sensitive uses at OTC (i.e., residential).

4.4.13.2 Relevant Past, Present, and Future Actions

Table 4.3-2 lists the cumulative actions that might interact with the Proposed Action Alternatives and cumulatively affect noise within the ROI. These actions primarily consist of construction and development projects. Management plans such as the San Diego General Plan, the community plans, or regional plans have the potential to shift land use over time and impact the noise environment and sensitive noise receptors. Major actions, such as the expansion of the San Diego International Airport, could result in greater numbers of aircraft operating at San Diego International Airport and an associated increase in aircraft-generated noise within the ROI.

Cumulative Impact Analysis

Alternative 1

As presented in Section 3.13, *Noise*, implementation of Alternative 1 would not result in significant noise impacts at either OTC or nearby noise sensitive locations. As identified in Tables 4.3-1 and 4.3-2, the City of San Diego has various plans that could change land use and development within the ROI, which would in turn alter the noise environment, locations, and number of sensitive noise receptors. Such a change in land use may create new noise sensitive land uses near OTC, but such development would be less affected by noise associated with OTC Alternative 1 than by increased city traffic anticipated in the San Diego General Plan or by existing aircraft-generated noise.

Implementation of the identified cumulative actions would result in temporary noise impacts from construction, repair, renovation, and/or demolition activity. Construction activity would abide by City of San Diego municipal code requirements governing the hours of construction. The identified cumulative actions would largely be new buildings that would not create any substantial new sources of noise beyond existing and future anticipated aircraft and vehicle noise levels. Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the ROI. There would be no substantial change to the noise environment at the identified sensitive noise receptors. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to the noise environment within the ROI.

Alternatives 2 and 3

Primarily due to the duration and intensity of construction noise, impacts to the noise environment under Alternative 2 or 3 would be significant (see Section 3.13, *Noise*). Collectively within the ROI, due to the increase in cumulative actions considered, there would be a greater potential for cumulative impacts to the noise environment. Notably, the San Diego International Airport Development Plan proposes an increase in flight operations that would result in an increase in noise levels within the ROI. The greatest increase would apply for the 2050 scenario where the 60 dB CNEL would completely cover OTC Site 1 and the 65 dB CNEL would cover OTC Site 2 (Figure 4.4-6).

The increase in noise exposure would place OTC Site 2 within the 65 dB CNEL, which is considered to be incompatible with residential use by the Airport Land Use Compatibility Plan. The residential land use type is classified as a noise sensitive use requiring sound insulation to reach compatibility. Airport Land Use Compatibility Plan land use guidelines and mitigations would require sound insulation of residential structures exposed to 65 dB CNEL or greater to provide noise level reductions of 25 dB. Qualifying structures within the ROI would be subject to noise reducing measures.

(Note to reviewer: Because this is federal government property, the developer may be able to avoid Airport Land Use Compatibility Plan mitigation requirements (e.g., sound insulation). However, it may make sense for the Navy to mirror such Airport Land Use Compatibility Plan mitigation in any contract with a developer. Maybe address this in mitigations?)

Each cumulative action would comply with requirements on construction hours unless a noise variance for nighttime or weekend work is obtained. The identified proposed cumulative actions would not result in any new substantial permanent sources of noise. Aircraft activity at San Diego International Airport and traffic along Interstate 5 (Figure 4.4-7) would continue to dominate the noise environment within the ROI. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to the noise environment within the ROI.

Alternatives 4 and 5

Impacts to the noise environment under Alternative 4 or 5 would be similar to those under Alternative 2 and 3; significant impacts would occur, primarily due to the extended construction schedule that would allow periodic development through 2050. It may not be possible to fully mitigate construction noise over the 30-year timeframe, which could be considered non-temporary. Collectively within the ROI, due to the increase in cumulative actions considered, there would be a greater potential for temporary cumulative impacts to the noise environment.

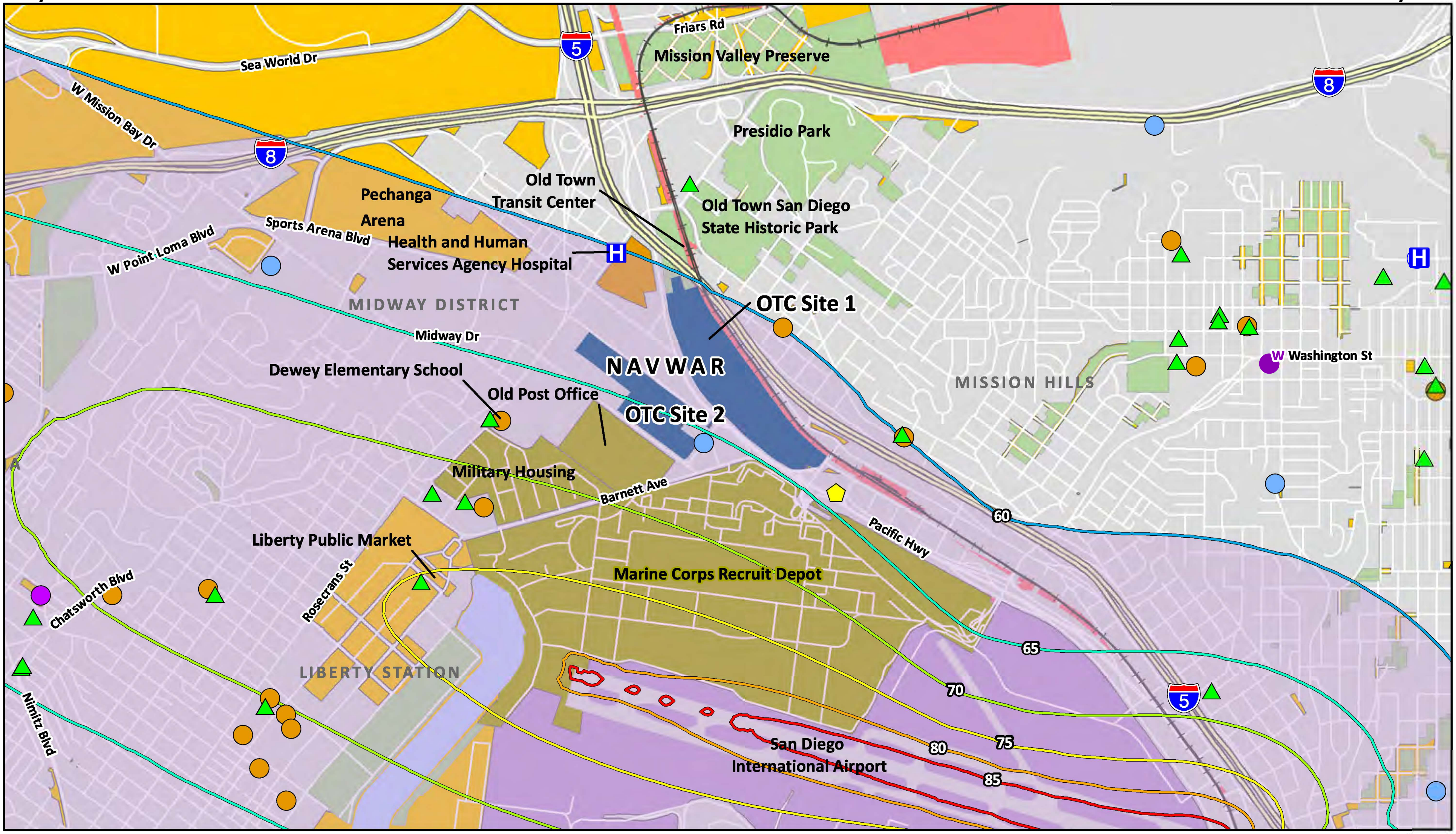
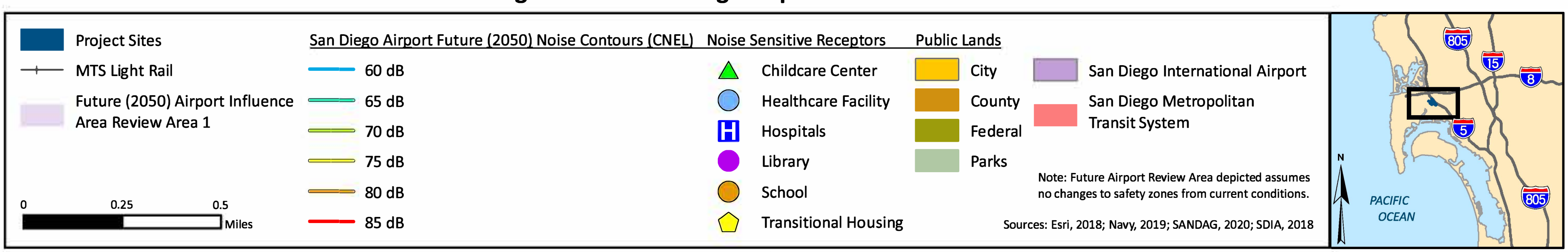


Figure 4.4-6. San Diego Airport Future Noise Contours



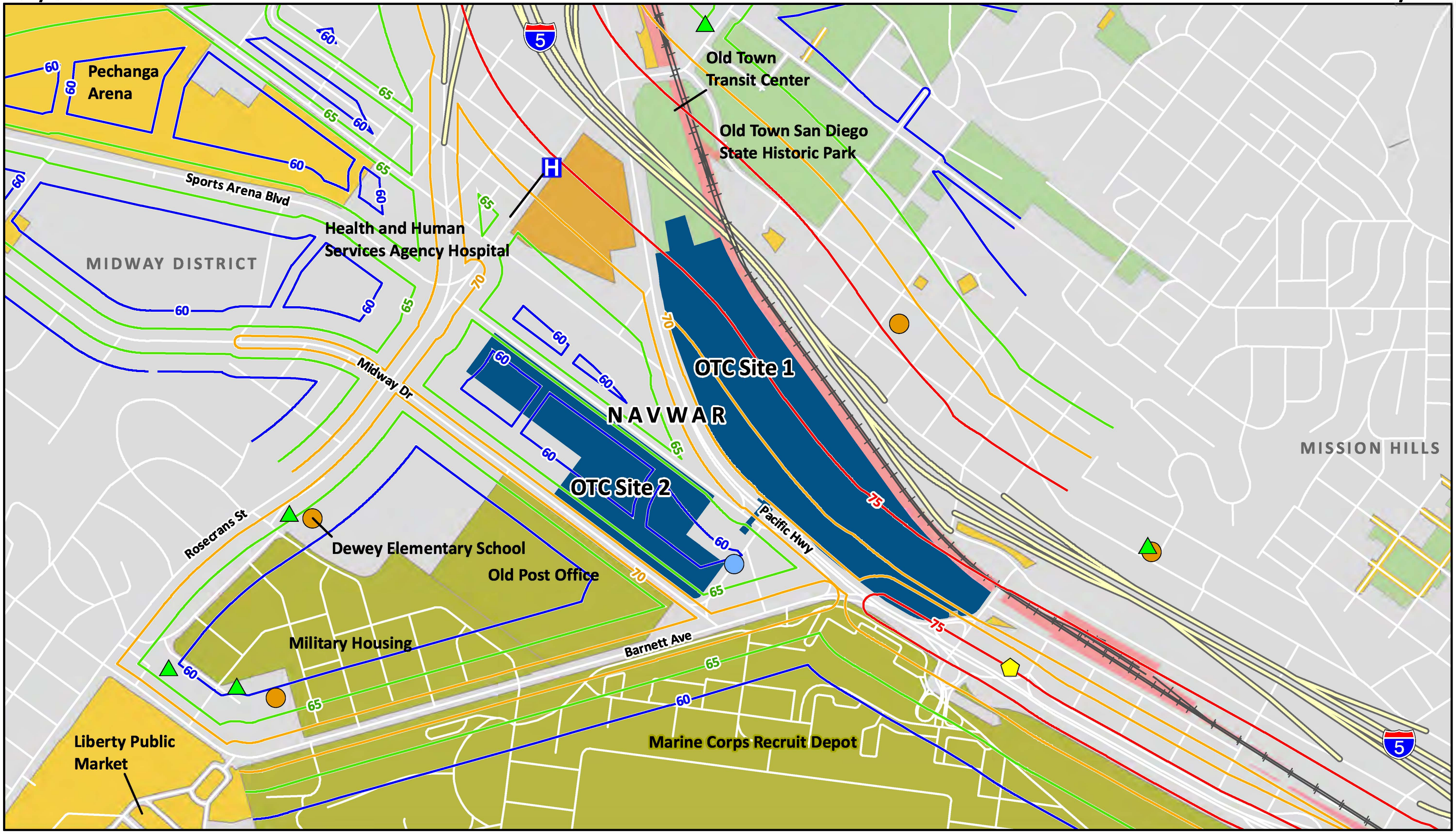
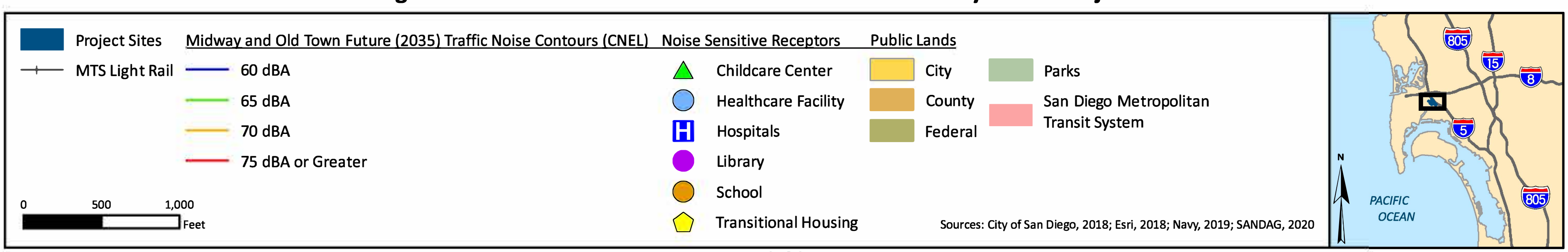


Figure 4.4-7. Future Traffic Noise Contours in the Vicinity of the Project Sites



Operationally, the Central Mobility Hub Connection to San Diego International Airport could result in a new permanent noise source within the ROI, if located aboveground. The aboveground option would introduce rail noise on streets that do not have rail operations along that road or immediately adjacent. However, rail noise is an existing and regular noise source in the ROI. If below ground, most, if not all, of the noise would be indistinguishable within the noise environment. Proposed regional transportation plans aim to reduce the vehicles and correspondingly could result in a decrease in vehicle-generated noise and an increase in the frequency of noise generated by mass transit modes (e.g., buses and trains). Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the ROI (see Figure 4.4-6). Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would result in significant cumulative impacts to the noise environment within the ROI.

4.4.14 Geological Resources

4.4.14.1 Description of Geographic Study Area

The ROI for geological resources under Alternative 1 consists of OTC. The ROI increases to include construction within the Old Town and Uptown community planning areas, San Diego International Airport, and Harbor Island for Alternatives 2 and 3. For Alternatives 4 and 5, the ROI also considers areas potentially subject to ground disturbance associated with the regional plans summarized in Table 4.3-1.

As discussed in Section 3.14, *Geology*, there are no potentially developable mineral resource deposits, paleontological resources, or agriculturally productive soils at OTC. Therefore, none of the project alternatives would affect these resources, and they are not evaluated further. In addition, OTC is not located within the tsunami inundation area mapped by the California Emergency Management Agency, so tsunami risks are not addressed in this analysis.

4.4.14.2 Relevant Past, Present, and Future Actions

A majority of the construction actions listed in Tables 4.3-1 and 4.3-2 would involve ground disturbance or vegetation removal. As such, they have the potential to cumulatively impact geological resources by disrupting soil surfaces, causing compaction and erosion, or altering topography in the ROI. The actions identified in Tables 4.3-1 and 4.3-2 also have the potential to be affected by seismic events.

4.4.14.3 Cumulative Impact Analysis

Alternative 1

The analysis presented in Section 3.14, *Geological Resources* concluded that with the implementation of proper seismic design, soil erosion programs, and a project-specific Stormwater Pollution Prevention Plan with associated BMPs, implementation of Alternative 1 would result in less than significant impacts.

Topography

Proposed ground-disturbing activities under Alternative 1 and other nearby cumulative construction projects, would result in minimal alteration of existing topography and would occur on previously developed surfaces. Following construction there would be no additional alteration of topography. Because the site is flat, there would not be an increased potential risk for landslides. Therefore, when combined with past, present, and reasonably foreseeable actions, implementation of Alternative 1 would result in less than significant cumulative impacts to topography.

Soils

Construction activities under Alternative 1 and nearby cumulative actions would increase soil susceptibility to erosion, compaction, and displacement. For all construction projects that disturb over 1 acre (including Alternative 1), appropriate erosion control BMPs would be required in accordance with a project-specific construction Stormwater Pollution Prevention Plan, and in compliance with coverage under the National Pollutant Discharge Elimination System Construction General Permit. Following construction there would be no additional disturbance of soils.

Geologic Hazards

As described in Section 3.14, *Geological Resources*, the location of facilities, project design, and construction under Alternative 1 would be based on engineering recommendations detailed in the Faulting, Seismicity, and Geologic Hazards Investigation; the Geotechnical, Geologic, and Seismic Hazards Impacts Investigation; and the Fault Surface Rupture Displacement Hazard Investigation (if an active fault is identified within the OTC). For many cumulative actions involving new construction, similar geotechnical investigations may also be conducted to determine fault locations and other seismic hazards. Site-specific seismic engineering and design standards would be implemented for Alternative 1. Specifically, structures would be constructed to comply with all applicable codes and regulations, to include the California Building Code, City of San Diego Municipal Code, the Alquist-Priolo Earthquake Fault Zoning Act, the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California, as applicable.

Summary

The identified cumulative actions would not result in a substantial change to topography, would implement BMPs to control soil erosion, and would build all structures to seismic code. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to the geological resources within the ROI.

Alternatives 2 and 3

Impacts to geological resources under Alternative 2 or 3 would be similar to those described above for Alternative 1 and would also be less than significant. Collectively within the ROI, there would be a greater potential for cumulative impacts to geological resources due to the increased activity and soil disruption associated with Alternative 2 or 3. However, the same erosion control, geotechnical investigations, design criteria, and engineering requirements would be implemented, as applicable. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to geological resources within the ROI.

Alternatives 4 and 5

Impacts to geological resources under Alternative 4 or 5 would be similar to those described under Alternatives 2 and 3 and would also be less than significant. Collectively within the ROI, there would be a greater potential for cumulative impacts to geological resources due to the increased activity and geographic extent of Alternative 4 or 5. However, the same erosion control, geotechnical investigations, design criteria, and engineering requirements would be implemented, as applicable. While the foreseeable mass transit actions (e.g., the Central Mobility Hub Connection to San Diego International Airport) have the potential to disturb a large amount of soil in the course of construction, the same erosion control and engineering requirements would be implemented to minimize impacts to geological resources and ensure seismic safety during the operational phases. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to geological resources within the ROI.

4.4.15 Water Resources

4.4.15.1 Description of Geographic Study Area

The ROI for water resources includes the surface water and groundwater features that could be subject to direct or indirect effects from implementation of the Proposed Action Alternatives. As discussed in Section 3.15, *Water Resources*, there are no surface water features within or adjacent to the project site. The closest surface water features to the project site are the San Diego River and San Diego Bay, located approximately 0.5 and 0.75 mile, respectively from OTC. Stormwater runoff from OTC is discharged via outfalls to the San Diego River and San Diego Bay; therefore, portions of the San Diego River and Bay are included in the ROI. The ROI for groundwater resources consists of the portion of the San Diego Mesa Hydrologic Area groundwater basin immediately beneath the project site.

4.4.15.2 Relevant Past, Present, and Future Actions

Relevant past, present, and reasonably foreseeable actions that might interact with the Proposed Action Alternatives to cumulatively affect water resources are those with the potential to:

- result in a substantial increase in runoff volumes and/or alterations of drainage patterns that could result in flooding
- substantially degrade the quality of surface or receiving waters
- reduce supplies or alter beneficial uses of groundwater

Of the past, present, and reasonably foreseeable actions listed in Tables 4.3-1 and 4.3-2, only those located within the same watershed as OTC would have potential for contributing to cumulative impacts related to runoff volumes or drainage patterns. These cumulative actions include the miscellaneous projects and construction of pre-engineered buildings at OTC; Marine Corps Community Services car wash project at MCRD San Diego; SANDAG transportation projects that traverse the watershed; various Port of San Diego projects; and miscellaneous projects at San Diego International Airport, Liberty Station, and the Sports Arena that are near OTC. All other listed actions are outside of the watershed and would not affect runoff patterns in the vicinity of OTC.

Similarly, only past, present, and future actions that involve or could involve discharges, including stormwater runoff, to the San Diego River and San Diego Bay would have potential for contributing to cumulative impacts related to surface water quality. These cumulative actions include: City of San Diego community plans and actions; SANDAG transportation projects that traverse the watershed, such as coastal rail improvements; and regional water quality improvement plans and projects, such as the Regional Water Quality Board’s Total Maximum Daily Load for Indicator Bacteria, Project 1 – Twenty Beaches and Creeks in the San Diego Region. Additionally, the San Diego Bay Watershed Water Quality Improvement Plan (City of San Diego, 2016d) was developed to guide responsible parties within the San Diego Bay Watershed toward achieving improved water quality in municipal stormwater discharges as well as improve communication between non-municipal entities within the San Diego Bay Watershed (e.g., the Navy) and the appropriate regulatory agencies to ensure that discharges are appropriately regulated and to improve water quality throughout the San Diego Bay Watershed.

Groundwater associated with the San Diego Mesa Hydrologic Unit that includes OTC has no designated beneficial uses. Thus, it is unlikely that any of the present and future actions would include requirements for extracting or discharge to groundwater with the potential for affecting supplies or altering beneficial uses.

4.4.15.3 Cumulative Impact Analysis

Alternative 1

Alter Drainage Patterns

The analysis presented in Section 3.15, *Water Resources* concluded that with the implementation of a project-specific Stormwater Pollution Prevention Plan with associated BMPs, implementation of Alternative 1 would result in less than significant impacts.

As discussed in Section 3.15, *Water Resources*, no surface water features, such as creeks or streams, are within OTC. Thus, Alternative 1, with or without other, future, miscellaneous actions at OTC, would not alter drainage patterns associated with an on-site stream system or flood channel. Further, no major stream systems exist in the sub-watershed that includes OTC. Thus, none of the other past, present, and reasonably foreseeable actions located within this sub-watershed would alter or interfere with drainage of a stream system or flood channel in a manner that would increase risks of flooding or redirect flood flows that would potentially harm life or property either on-site or off-site. OTC and immediately adjacent properties are located in an area with a low flood risk. Implementation of Alternative 1, together with the other past, present, and reasonably foreseeable actions would not increase the flood risk.

Surface water flows at OTC are limited to stormwater runoff that is directed via grading to the City of San Diego's storm drainage system. OTC is almost entirely covered by impervious surfaces. Implementation of Alternative 1, along with other, future, miscellaneous actions at OTC, would not substantially change the amount of impervious surface in a manner that would increase runoff volumes because the areas subject to impact are already impervious surfaces. Similarly, actions at adjacent properties, such as the San Diego International Airport, MCRD San Diego, Liberty Station, and Sports Arena, are unlikely to substantially change the existing coverages with impervious surfaces to an extent that would influence runoff volumes.

Stormwater is managed in accordance with the California General Permit for stormwater discharges associated with industrial storm activities, the Small Municipal Separate Storm Sewer System permit requirements, and individual industrial wastewater discharge permits. Permit conditions require implementation of a Stormwater Pollution Prevention Plan that specifies BMPs for managing stormwater discharges. Alternative 1, along with the identified present and future actions, would comply with permit conditions governing stormwater discharges. Compliance with permit conditions, together with implementation and maintenance of BMPs, would ensure that stormwater flows are appropriately managed.

Consequently, Alternative 1 in combination with the identified cumulative actions would not contribute to cumulative changes in runoff or surface flows in a manner that would increase risks of flooding or inundation.

Alter Surface Water Quality

No surface water features exist within or immediately adjacent to OTC. Further, per the Basin Plan (Regional Water Quality Control Board, 2016), surface waters within this basin are exempt from Municipal and Domestic Supply (uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply) beneficial uses. Thus, operations associated with Alternative 1, as well as those associated with other, future, miscellaneous actions at OTC, would not directly affect the quality or beneficial uses of surface water at the project site.

Discharges from past, present, and reasonably foreseeable actions, with the possible exception of the San Diego Bay Fireworks Display Events, would be limited to stormwater during the construction and operation phases. Stormwater discharges from these projects would be governed by National Pollutant Discharge Elimination System permits that specify effluent limitations and discharge specifications, as well as receiving water limitations intended to ensure that discharges comply with water quality regulatory standards and would not degrade surface or groundwater quality.

The Regional Water Quality Control Board considers that discharges of waste regulated under waste discharge requirements do not cause or contribute to violations of these water quality standards.

The lower portion of the San Diego River is on the 303(d) list as impaired due to indicator bacteria and portions of the San Diego Bay are on the 303(d)-list due to PCBs, elevated copper concentrations, and bacteria. For those stressors causing water quality impairments, total maximum daily loads are being or will be developed that specify load allocations from the individual input sources, such that the cumulative loadings would be below levels expected to adversely affect water quality and beneficial uses of the water body. In the absence of restricted load allocations, the impairments would be expected to persist. Because permits regulate stormwater discharges, impacts from these discharges would be consistent with existing regulations and approved total maximum daily loads for the constituents of concern. In addition, the strategies described in the San Diego Bay Watershed Water Quality Improvement Plan will continue to be implemented to improve water quality throughout the watershed.

Consequently, Alternative 1, in combination with the identified cumulative actions would not contribute to cumulative alterations in surface water quality.

Reduce Supply or Alter Beneficial Uses of Groundwater

Connectivity between surface and groundwater at OTC is limited because the project site is almost entirely covered with an impervious surface; consequently, infiltration of surface water to groundwater is negligible. Implementation of Alternative 1 would not substantially change the amount of impervious surface. Further, groundwater at this location is not potable, and there are no plans to extract groundwater for on-site consumption. Thus, Alternative 1 would not affect supply or quality of groundwater. Similarly, it is unlikely that other, future miscellaneous actions at OTC would include plans for extracting groundwater for onsite use, other than minor volumes associated with site dewatering during construction. Consequently, Alternative 1 in combination with the identified cumulative actions would not contribute to cumulative reductions in groundwater supply or alter beneficial uses of groundwater.

Summary

Cumulative water resources impacts from past, present, and reasonably foreseeable actions within the ROI would be less than significant because of (1) the very limited impacts to surface or groundwater resources that would occur under Alternative 1, and (2) the limited extent and beneficial uses of surface and groundwater resources that are likely to be affected by the other past, present, and reasonably foreseeable actions. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to water resources within the ROI.

Alternatives 2 and 3

Impacts to water resources under Alternative 2 or 3 would be similar to those described under Alternative 1 and would also be less than significant. The relevant past, present, and reasonably foreseeable actions that might interact with Alternative 2 or 3 to affect water resources would be the same as for Alternative 1. Consequently, for the reasons presented above, Alternative 2 or 3 would not contribute to: cumulative changes to runoff or surface flows in a manner that would increase risks of flooding or inundation; cumulative, adverse changes to surface water quality; or to cumulative changes to the supply or beneficial uses of groundwater.

Cumulative water resources impacts within the ROI would be less than significant because of (1) the very limited impacts to surface or groundwater resources that would occur under Alternative 2 or 3, and (2) the limited extent and beneficial uses of surface and groundwater resources that are likely to be affected by the other past, present, and reasonably foreseeable actions. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to water resources within the ROI.

Alternatives 4 and 5

Impacts to water resources under Alternative 4 or 5 would be similar to those described under Alternative 1 and would also be less than significant. The relevant past, present, and future actions that might interact with Alternative 4 or 5 to affect water resources would be the same as for Alternative 1. Consequently, for the reasons presented above, Alternative 4 or 5 would not contribute to: cumulative changes to runoff or surface flows in a manner that would increase risks of flooding or inundation; cumulative, adverse changes to surface water quality; or to cumulative changes to the supply or beneficial uses of groundwater.

Cumulative water resources impacts within the ROI would be less than significant because of (1) the very limited impacts to surface or groundwater resources that would occur under Alternative 4 or 5, and (2) the limited extent and beneficial uses of surface and groundwater resources that are likely to be affected by the other past, present, and reasonably foreseeable actions. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to water resources within the ROI.

4.4.16 Biological Resources

4.4.16.1 Description of Geographic Study Area

The ROI for biological resources includes the OTC and immediately surrounding areas potentially exposed to noise or visual impacts during construction and operations.

4.4.16.2 Relevant Past, Present, and Future Actions

Table 4.3-2 identifies those past, present, and reasonably foreseeable actions that have the most potential to contribute to cumulative biological resource effects when combined with the Proposed

Action Alternatives. These actions include the City of San Diego Community Plans and Projects, SANDAG Plans and Projects, Port of San Diego Projects, and Miscellaneous Plans and Projects.

4.4.16.3 Cumulative Impact Analysis

Alternative 1

Alternative 1 would have no effect on or related to natural habitats, habitat fragmentation, or federally listed species. All proposed activities under Alternative 1 would occur on previously developed land, in a highly urbanized setting. Under Alternative 1, the proposed construction, repair, renovation, and/or demolition activities would result in minimal direct impacts to wildlife species from increased noise, human presence, and night lighting. Mammal and bird species that may transit the area would likely avoid the project area. The implementation of proposed management practices (Section 3.16, *Biological Resources*) would further reduce the potential to impact wildlife directly or indirectly, roosting/nesting birds and bats, or special-status species that may occur in or near the project area. The analysis presented in Section 3.16, *Biological Resources* concluded that the construction and operations under Alternative 1 would not result in significant impacts to biological resources.

Historical actions such as infrastructure development, reclamation projects, and other human uses have resulted in significant impacts to regional wildlife populations and habitats within the ROI. Several of the cumulative actions identified in Table 4.3-2 involve construction in and/or development of natural habitats. These actions would have the potential to impact special-status species that occur in the region. The actions would also result in temporary habitat and species disturbance, habitat loss and degradation, habitat fragmentation, and incidental mortality. The identified actions in Table 4.3-2 would complete any required consultation with regulatory agencies, such as USFWS and California Department of Fish and Wildlife. The actions in Table 4.3-2 that may potentially impact biological resources would implement management practices and/or mitigation measures, such as monitoring, restoration, or habitat enhancement to limit impacts to habitats and species, as necessary.

Cumulatively, while any action may have the potential to impact individual species and habitat, the overall distribution or abundance of populations and habitats and ecosystem functions and values would not be significantly affected. Other ongoing and reasonably foreseeable construction and infrastructure actions are likely to result in localized habitat loss and minor impacts to biological resources, while project-related restoration/mitigation is likely to offset some past habitat loss and improve habitat for biological resources.

Ongoing and future natural resources management activities on DoD-owned lands and lands administered by the City of San Diego, the Port of San Diego, and other entities would protect and benefit biological resources in the region, including federally listed species, birds protected under the Migratory Bird Treaty Act, and species designated as California species of special concern. Alternative 1 in conjunction with the identified cumulative actions may elicit temporary behavioral responses in small numbers of wildlife species; however, species would not be impacted at a population level.

Cumulative biological resources impacts from past, present, and reasonably foreseeable actions within the ROI would be less than significant because those actions that may potentially impact biological resources would implement management practices, mitigation measures, and/or regulatory guidelines to limit impacts to habitats and species. Therefore, implementation of Alternative 1 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to biological resources within the ROI.

Alternatives 2 and 3

Implementation of Alternative 2 or 3 would include additional building demolition, construction, and operational activity, but within the same area as Alternative 1. Building heights under Alternative 2 or 3 would be higher than under Alternative 1 (up to 240 feet); however, Alternatives 2 and 3 would occur in a highly developed setting that already has surrounding structures and building heights would generally be consistent with the surrounding urban environment. As such, impacts to biological resources would be similar to those presented under Alternative 1. The increase in demolition, construction, and operations would not change the impact analysis conclusions as presented for Alternative 1.

Collectively within the ROI, there would be a greater potential for cumulative impacts to biological resources due to the increase in actions considered. However, the additional cumulative actions considered would also be subject to the same regulatory consultation(s), resource protection requirements, and/or mitigation measures, as applicable. In addition, the natural resources management activities would continue to protect and benefit biological resources. Therefore, implementation of Alternative 2 or 3 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to biological resources within the ROI.

Alternatives 4 and 5

Implementation of Alternative 4 or 5 would include the consolidation of a transit center to OTC. Building heights under Alternative 4 or 5 would be higher than under Alternative 1; however, Alternative 4 or 5 would occur in a highly developed setting that already has surrounding structures and building heights would generally be consistent with the nearby downtown urban environment. As such, cumulative impacts to biological resources would be similar to those presented under Alternatives 2 and 3. The increase in activity would not change the impact analysis conclusions as presented for Alternatives 2 and 3. Therefore, implementation of Alternative 4 or 5 when combined with the past, present, and reasonably foreseeable actions would not result in significant cumulative impacts to biological resources within the ROI.

Summary of Impacts

Table 4.4-4 summarizes the potential cumulative effects from implementation of the Proposed Action Alternatives in combination with the identified past, present, and reasonably foreseeable actions.

Table 4.4-4 Summary of Cumulative Impacts by Alternative and Resource Area

Resource Area	*Alternative 1*	*Alternative 2 or 3*	*Alternative 4 or 5*
Air Quality	Significant	Significant	Significant
Transportation	Significant	Significant	Significant
Visual Resources	Not Significant	Significant	Significant
Land Use	Not Significant	Significant	Significant
Socioeconomics	Not Significant	Significant	Significant
Cultural Resources	Not Significant	Not Significant	Not Significant
Hazardous Materials and Wastes	Not Significant	Not Significant	Not Significant
Public Health and Safety	Significant	Significant	Significant
Environmental Justice and Protection of Children	Significant	Significant	Significant
Public Services	Not Significant	Not Significant	Not Significant
Infrastructure	Not Significant	Significant	Significant
Airspace	Not Significant	Not Significant	Not Significant
Noise	Not Significant	Significant	Significant
Geological Resources	Not Significant	Not Significant	Not Significant
Water Resources	Not Significant	Not Significant	Not Significant
Biological Resources	Not Significant	Not Significant	Not Significant

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5 Other Considerations Required by NEPA

5.1 Possible Conflicts with Objectives of Federal, Regional, State, and Local Plans, Policies, and Controls

In accordance with 40 CFR section 1502.16(c), this section discusses the consistency of the Proposed Action Alternatives with the objectives of federal, regional, state, or local plans, policies, and controls. As discussed in Section 3.4, *Land Use*, all five of the action alternatives would be consistent with military and regional land use plans and policies, and Alternative 1 would also be consistent with all local land use plans, policies, and controls.

While the public-private mixed-use development proposed under Alternatives 2 through 5 would be consistent with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan, the higher density of use would not be consistent with the densities currently envisioned in that plan. The increased density supported by the public-private development scenarios in these four alternatives would contribute to growth in dwelling units, population, jobs, and non-residential uses that significantly exceed the growth targets contained in the community plan. Based on the long-term development phasing of these action alternatives paralleling the 30-year timeframe of the Midway-Pacific Highway Community Plan, the Proposed Action Alternatives provides information for the City of San Diego to update the community plan to incorporate the proposed OTC project and modify the planned land use densities in the OTC area. The ROD will identify Navy's selected alternative and provide information on the anticipated land use densities.

Alternatives 2 through 5 would be consistent with SANDAG's 2019 Federal Regional Transportation Plan by implementing transit-oriented development. With the incorporation of a transit center at OTC, Alternatives 4 and 5 would improve the connectivity of public and private uses at OTC to transit, as it would be more directly integrated into the planned development than the nearby Old Town Transit Center. All four of these alternatives would be consistent with the city's General Plan, and with the Midway-Pacific Highway community plan's goals for development of residential and employment uses in proximity to transit and use of a multi-modal approach to improving circulation and access throughout the community.

Alternatives 2 through 5 would not change the Airport Influence Area (Review Areas 1 or 2) for the San Diego International Airport and building sound attenuation requirements would remain in place. The taller buildings proposed under Alternatives 2 and 3 (maximum height of 240 feet) and Alternatives 4 and 5 (maximum height of 350 feet) would exceed the 150-foot horizontal imaginary surface extended 10,000 feet out from the San Diego International Airport runway (see Section 3.12, *Airspace*). Thus, the final site plan and building design will need to be reviewed by the FAA and could be considered an obstruction or hazard to general aviation departing San Diego International Airport.

Table 5-1 summarizes the Navy's compliance with other federal and state laws and regulations that are applicable to the Proposed Action Alternatives.

Table 5-1 Federal and State Laws Applicable to the Proposed Action Alternatives

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	*Status of Compliance*
NEPA of 1969 (42 U.S.C. section 4321 et seq.) CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500–1508) Department of the Navy Procedures for implementing NEPA (32 CFR part 775)	This EIS was prepared in compliance with NEPA, CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500–1508), and Navy Procedures for implementing NEPA (32 CFR part 775).
CAA (42 U.S.C. section 7401 et seq.) CAA General Conformity Rule (40 CFR part 93[B]) State Implementation Plan	Based on the analysis presented in Section 3.1, *Air Quality*, the Proposed Action Alternatives would occur within a nonattainment or maintenance area and the General Conformity Rule applies. The general conformity analysis is included as Appendix D. The Proposed Action Alternatives would comply with applicable permit requirements under the Prevention of Significant Deterioration program per 40 CFR section 51.166, the Title V Operating Permit Program per 40 CFR part 70, and all specific requirements contained in their individual permits. Per CAA requirements, a New Source Review would be completed prior to construction.
Clean Water Act (33 U.S.C. sections 1251–1387)	Based on the analysis presented in Section 3.15, *Water Resources*, the Navy has determined that the Proposed Action Alternatives would have less than significant effects on the quality or quantity of surface waters or underground aquifers. The Proposed Action Alternatives would include no new point or nonpoint discharges into surface waters, nor would it include dredging or filling of surface waters. Therefore, the Proposed Action Alternatives would be in compliance with the Clean Water Act.
Coastal Zone Management Act (16 CFR sections 1451 et seq.) California Coastal Act of 1976 (14 California Code of Regulations section 13001 et seq.)	The Proposed Action Alternatives does not exist within the coastal zone but has the potential to affect the coastal zone through runoff and drainages. The Navy will consult with the California Coastal Commission in compliance with the Coastal Zone Management Act, which states that federal actions that have reasonably foreseeable effects on coastal uses or resources must be consistent to the maximum extent practicable with the enforceable policies of approved state coastal management programs. Applicable sections of the California Coastal Act of 1976 (14 California Code of Regulations section 13001 et seq.) were thoroughly analyzed against the Proposed Action Alternatives. The Navy is preparing a coastal consistency determination for the Proposed Action.

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	*Status of Compliance*
NHPA (16 U.S.C. sections 470 et seq.) including the Archaeological Resources Protection Act EO 13175, Consultation and Coordination with Indian Tribal Governments	The Proposed Action Alternatives would be implemented in compliance with Section 106 through the Programmatic Agreement among the Commander Naval Base Point Loma, the ACHP, and the California SHPO Regarding Naval Base Point Loma Undertakings, San Diego, California, and pursuant to the criteria developed by the Navy for cultural resources management practices. A California Native American Heritage record search did not indicate the presence of Native American cultural resources in or within the vicinity of the Proposed Action area (see the Cultural Resources Technical Report, Appendix H). Proposed mitigation measures would be developed in consultation with the SHPO during development of a NHPA Section 106 Memorandum of Agreement that addresses adverse effects on historic properties affected by the Proposed Action Alternatives, as well as significant impacts under NEPA.
Endangered Species Act (16 U.S.C. sections 1531 et seq.)	Section 3.16, *Biological Resources*, of the EIS analyzes potential effects to species listed under this Act. A USFWS Information for Planning and Consultation search was conducted to identify the potential occurrence of federally threatened and endangered species in the ROI. OTC does not contain habitat or resources for any federally listed wildlife species or bird species designated as California species of special concern; therefore, consultation with USFWS in compliance with section 7 of the Act would not be required.
Migratory Bird Treaty Act (16 U.S.C. section 703–712) EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	Birds, both migratory and most native-resident bird species, potentially occurring at OTC are protected under these laws. Based on the analysis in Section 3.16, *Biological Resources*, a relatively small number of bird species that have the potential to occur at OTC are known to use human-made structures for nesting and/or roosting. If demolition or construction activities take place during the southern California bird breeding season (February 1 to August 31) for resident and migratory birds, as stipulated by the California Department of Fish and Wildlife, a qualified biologist would conduct surveys for nesting birds within a 500-foot radius of the demolition or construction area (including potential building-nesting birds). If nests are detected, 250-foot no-activity buffers would be established around nests to ensure breeding is not disrupted or adversely impacted by demolition and/or construction. Buffers would be maintained until the young fledge or the nests become inactive.
Noise Control Act of 1972 Chief of Naval Operations Instruction 11010.36C and Marine Corps Order 11010.16, AICUZ Program	Based on analysis in Section 3.13, *Noise*, proposed residential development at OTC could conflict with the San Diego International Airport's Airport Land Use Compatibility Plan guidance for land use due to existing Community Noise Equivalent Levels caused by aircraft operations at San Diego International Airport. The proposed residential development would incorporate modern energy design recommendations regarding insulation and window types that often exceed the noise level reductions specified by the City of San Diego for these exterior noise levels.

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***
Comprehensive Environmental Response and Liability Act (42 U.S.C. section 9601 et seq.)	Based on analysis in Section 3.7, *Hazardous Materials and Wastes*, the Navy would continue to implement the Defense Environmental Restoration Program activities on OTC, and development activities on OTC would need to be coordinated with the Regional Water Quality Control Board and the Department of Toxic Substances Control to ensure proposed development (including mixed uses) would be compatible with subsurface conditions.
Emergency Planning and Community Right-to-Know Act (42 U.S.C. section 11001 et seq.)	The Emergency Planning and Community Right-to-Know Act is applicable to the Proposed Action Alternatives because small quantities of hazardous materials would be stored on-site. Section 312 (Tier Two) reporting applies; this requirement is satisfied by complying with California's counterpart regulations. Under the Proposed Action Alternatives, the Navy would not manufacture, store, or otherwise use hazardous chemicals above Toxics Release Inventory (Emergency Planning and Community Right-to-Know Act Section 313) reporting thresholds.
Federal Insecticide, Fungicide, and Rodenticide Act	Federal Insecticide, Fungicide, and Rodenticide Act regulates the use of pesticides. Under the Proposed Action Alternatives, all pesticides would be used in accordance with their labeling, and only certified applicators would apply restricted-use pesticides. Any wood pilings from the demolition would be disposed of in accordance with federal, state, and local regulations.
Resource Conservation and Recovery Act (42 U.S.C. section 6901 et seq.)	Small quantities of hazardous waste would continue to be generated at OTC under the Proposed Action Alternatives. Hazardous wastes would continue to be safely disposed of through local vendors in accordance with hazardous waste standard operating procedures. All hazardous wastes generated at OTC are managed in accordance with the Commander, Navy Region Southwest Waste Management Plan for the San Diego Metro Area. Hazardous wastes would be properly contained and disposed of in accordance with applicable federal, state, and local regulations and Navy policies. The addition of a transit center would potentially add new hazardous materials and hazardous waste streams, including materials associated with vehicle maintenance such as lubricants and solvents. These materials and the wastes generated from their use would be managed by the San Diego MTS, which has policies and procedures for the management of hazardous materials and wastes consistent with the Resource Conservation and Recovery Act.
Toxic Substances Control Act (15 U.S.C. sections 2601–2629)	Small quantities of hazardous materials would continue to be stored and used at OTC under the Proposed Action Alternatives. Hazardous materials would continue to be monitored and labeled, and Safety Data Sheets provided to employees and the public in accordance with the Act and standard operating procedures.
Energy Independence and Security Act	The Proposed Action Alternatives includes upgraded facilities and building leases that would meet the Guiding Principles for Sustainable Federal Buildings, according to the Act.

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	*Status of Compliance*
EO 11988, Floodplain Management EO 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input	FEMA has not designated floodplains within OTC. The properties immediately adjacent to OTC are mapped by the FEMA Flood Insurance Rate Map as Zone X. The 100-year floodplain includes portions of the San Diego River but does not extend to OTC. OTC is not within a tsunami inundation zone. The Proposed Action Alternatives include development or construction activities and best practices that would be implemented in accordance with these EOs.
EO 12088, Federal Compliance with Pollution Control Standards	The Navy would continue to ensure federal facilities and activities under the Proposed Action Alternatives would be in compliance with environmental pollution prevention, control, and abatement standards.
EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations	Based on the analysis in Section 3.9, *Environmental Justice and Protection of Children*, implementation of the Proposed Action Alternatives would result in some disproportionately high and adverse human health or environmental effects on minority or low-income populations.
EO 13045, Protection of Children from Environmental Health Risks and Safety Risks	Based on the analysis in Section 3.9, *Environmental Justice and Protection of Children*, implementation of the Proposed Action Alternatives would result in some health or safety risks that may disproportionately affect children.
EO 13834, Planning for Federal Sustainability in the Next Decade EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management	EO 13834 aims to create a sustainable energy economy and demonstrate the federal government's commitment to reducing GHG emissions. As described in Chapter 2, construction projects evaluated under the Proposed Action Alternatives would incorporate Leadership in Energy and Environmental Design, commonly referred to as LEED, and sustainable development concepts to achieve optimum resource efficiency, sustainability, and energy conservation.

Legend: CEQ = Council on Environmental Quality; CFR = Code of Federal Regulations; EO = Executive Order; FEMA = Federal Emergency Management Agency; GHG = greenhouse gas(es); NEPA = National Environmental Quality Act; U.S.C. = U.S. Code; USFWS = U.S. Fish and Wildlife Service.

5.2 Relationship between Short-Term Uses and Long-Term Productivity

In accordance with the CEQ regulations (part 1502), this section considers the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity of that environment. Actions that would narrow the range of beneficial uses of the environment are of particular concern. This means that choosing one option may reduce future flexibility in pursuing other options, or that committing a resource to a certain use may eliminate the possibility for other uses of that resource.

Relatively short-term, temporary uses of the human environment arising from implementation of the Proposed Action Alternatives would primarily include the construction activity itself. Air emissions and noise would be generated in the short-term due to construction, and some of the productivity of the site would be limited due to limited access. However, construction would be of fixed duration relative to the operation phase of the project post-construction. Operational activities would be long-term and would, in turn, affect the long-term productivity of environmental resources on-site. The majority of activities addressed in this EIS would be categorized as long-term. The environment at OTC and the surrounding area is currently urban industrial and commercial in character and does not contain natural areas. The Navy's proposal to construct modern facilities for NAVWAR at OTC would increase long-term productivity of the urban environment by addressing the shortfall of current facilities to support the growth of NAVWAR. Addressing such shortfalls through planning and accommodation of future support facilities would allow the Navy to provide the capacity and capabilities to support required operational readiness and meet the Title 10 mandate (10 U.S.C. section 5062) to be organized, trained, and equipped for prompt and sustained combat. Under certain alternatives, the additional public-private development of residences and commercial developments would add long-term mixed uses to the site, adding housing and commercial productivity to an area which is currently primarily urban industrial and military use. Therefore, demolition of outdated structures, construction of new facilities, and improved operational capabilities would not significantly impact the long-term natural resource productivity of the area, which is already developed for urban uses. The Proposed Action Alternatives would not result in any impacts that would significantly reduce environmental productivity relative to current conditions or permanently narrow the range of beneficial uses of the environment.

5.3 Irreversible or Irretrievable Commitment of Resources

NEPA requires that environmental analysis include identification of “any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.” Irreversible and irretrievable resource commitments are related to the use of non-renewable resources on a long-term or permanent basis, and the effects that the use of these resources would have on future generations. Irreversible commitments of resources are those that cannot be reversed except over an extremely long period of time. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or minerals) that cannot be replaced within a reasonable time. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the disturbance of a cultural site). Such resources are irretrievable in that they would be used for the proposed project when they could have been used for other purposes. Human labor is also considered an irretrievable resource.

Construction and demolition activities associated with the Proposed Action Alternatives would involve human labor, and the consumption of fuel, oil and lubricants for construction vehicles. Construction activities would involve BMPs for energy efficiency and conservation of fuel. Military activities would not increase at the OTC under the Proposed Action Alternatives, but these activities would be conducted in different locations on OTC. The Navy would also make every effort to avoid the disturbance or irretrievable loss of non-renewable resources such as cultural sites, if any exist, during excavations and ground disturbance.

The only irretrievable commitment of resources associated with operational activities would be fossil fuel consumption, which would remain the same, or decrease slightly due to efficiency gains for military use under the Proposed Action Alternatives. Fossil fuel consumption associated with electricity for the operation of the private development and transit center portion of some of the alternatives may increase for the site in the short-term. However, increased energy usage is within planned levels for growth within the area and, due to California Renewable Portfolio Standard goals, would be exchanged over time for renewably-sourced energy. Currently SDG&E supplies a proportion of its electricity from renewable sources at a level above the Renewable Portfolio Standard benchmark for the current year, and plans to continue adding renewable sources according to the Renewable Portfolio Standard until it reaches 100 percent carbon free renewables by 2045. The impact of the irreversible and irretrievable commitments of resources associated with implementing the Proposed Action Alternatives would be less than significant.

5.4 Energy Use and Conservation Potential

Increased activities associated with the Proposed Action Alternatives would result in an increase in energy demand relative to the No Action Alternative. Although the required electricity demands would be met by the existing public electrical infrastructure, energy requirements would be subject to established energy conservation practices. The use of energy would be minimized through application of comprehensive sustainable design standards, such as minimization of non-renewable energy use, use of environmentally preferable and energy-efficient products, water conservation fixtures, enhanced operational and maintenance practices, etc.

5.5 Climate Change

A broad scientific consensus has identified global climate change as a growing threat to future environmental quality and living conditions everywhere on earth. Future environmental conditions in coastal areas like San Diego that are projected to result from various climate change scenarios and over various timeframes include: higher average temperatures in urban areas; sea level rise resulting in increased inundation and tidal flooding; increased risk and frequency of extreme weather, wildfires, and other climate-related events; and damage to aging and degraded infrastructure. Such future conditions could potentially affect or be affected by the Proposed Action Alternatives. The following subsections briefly discuss current climate change research and predictive models, explain how such models are used to predict future climate conditions that could affect OTC, and present predicted climate change conditions and scenarios. Based on this information, the potential for climate change to directly and indirectly impact the Proposed Action Alternatives, and the potential for the project to exacerbate climate change, are evaluated.

5.5.1 Overview of Climate Change Research and Modeling

According to the U.S. Global Change Research Program, the Intergovernmental Panel on Climate Change, and the National Oceanic and Atmospheric Administration (NOAA), a rapid global increase in GHG emissions is causing unprecedented warming of the earth, which is driving systemic changes across the earth's climate geography, ecological communities, and life systems (U.S. Global Change Research Program, 2017; Intergovernmental Panel on Climate Change, 2018; NOAA, 2017). The U.S. Global Change Research Program considers human activities to be the dominant cause of the observed trends in climate change (U.S. Global Change Research Program, 2017; Intergovernmental Panel on Climate Change, 2018; NOAA, 2017). Future climate projections made by NOAA, U.S. Global Change Research Program, California Natural Resources Agency, and the Intergovernmental Panel on Climate Change are based on scenarios of how human activities will continue to affect the climate over the remainder of this century and beyond (U.S. Global Change Research Program, 2018; NOAA, 2017; California Natural Resources Agency, 2018). The Fourth National Climate Assessment completed in 2018 includes detailed analysis of research findings focused on how climate change is affecting weather and climate, the impacts of climate change, and major trend predictions to the end of this century.

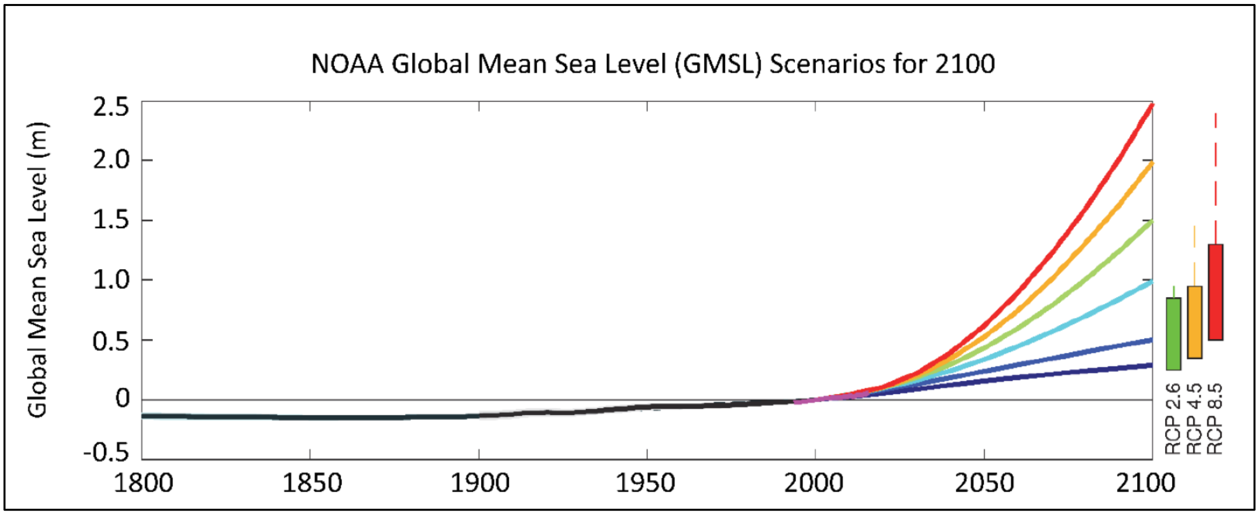
In addition to warming, many other aspects of global climate are changing, primarily in response to human activities. Thousands of studies have documented changes in surface, atmospheric, and oceanic temperatures; melting glaciers; diminishing snow cover; shrinking sea ice; rising sea levels; ocean acidification; and increasing atmospheric water vapor (U.S. Global Change Research Program, 2018). Predicted future scenarios, referred to as Representative Concentration Pathways (RCPs), provide the global framing for climate change assessments by focusing on outputs such as emissions and concentrations of GHG and particulate matter that are in turn fed into climate models to predict outcomes and effects such as global mean sea level (GMSL) rise, global average temperature increases, flooding and extreme weather events, etc. The most recent set of climate projections developed by the international scientific community is classified under four RCPs. The 2018 National Climate Assessment focuses on RCP 8.5 as a "higher" scenario, associated with more warming, RCP 4.5 as a "lower" scenario with less warming and RCP 2.6, as a "very low" scenario (the fourth, RCP 6.0, is not analyzed in the National Climate Assessment because its GMSL projections are nearly identical to those of RCP 4.5, and few models have been run for RCP 6.0 projections beyond 2100).

5.5.1.1 Predicted Future Conditions

The primary observable effect of rising GHG emissions is rising global temperatures. Over the next few decades (2021-2050), annual average temperatures are expected to rise under all plausible future climate scenarios by about 2.5°F relative to the recent past (average from 1976-2005). Much larger rises are projected by late century (2071-2100): 2.8°-7.3°F in a lower scenario (RCP 4.5) and 5.8°-11.9°F in a higher scenario (RCP 8.5). Without major reductions in emissions, the increase in annual average global temperature relative to preindustrial times could reach 9°F or more by the end of this century. Both the U.S. Global Change Research Program and Intergovernmental Panel on Climate Change predict that the urban heat island effect will strengthen in the future as the structure and spatial extent as well as population density of urban areas change and grow (National Climate Assessment, 2018; Intergovernmental Panel on Climate Change, 2014). In the United States, the urban heat island effect results in daytime temperatures that are 0.9°-7.2°F higher than in rural areas, and nighttime temperatures that are 1.8°-4.5°F higher, with larger temperature differences in humid regions (primarily in the eastern U.S.) and in large, densely populated cities (National Climate Assessment, 2018). With significant reductions in emissions, the increase in annual average global temperature could be limited to 3.6°F or less. The magnitude of climate change beyond the next few decades will depend primarily on the amount of GHG (especially carbon dioxide) emitted globally.

Rising global temperatures directly result in sea level rise, which may cause indirect effects to the project area around OTC. Sea level on the California coast has risen about 7-8 inches since 1900, with almost half (approximately 3 inches) of that rise occurring since 1993. The rate of rise is greater than during any preceding century in the last 2,800 years. Average sea levels for the project area are expected to continue to rise, by several inches in the next 15 years, and by 1-4 feet by 2100. Under the highest scenarios for GHG emissions, a rise of as much as 6.6 feet by 2100 is possible, though not likely, and a rise of 8 feet cannot be ruled out (National Climate Assessment, 2018).

The following graph (Figure 5-1) shows the most current predicted GMSL rise scenarios used by NOAA. There are six representative GMSL rise scenarios for 2100 (six colored lines) relative to historical geological, tide gauge, and satellite altimeter GMSL reconstructions from 1800-2015. The bars to the right of the graph represent the central 90 percent conditional probability ranges corresponding to the predicted scenarios based on the RCP used in the models of recent studies. The definition of the lowest scenario, depicted as the violet line, is the continuation of the current rate of GMSL rise (approximately 3 millimeters [or 1/8 inch] per year) through 2100, whereas the others are based on the 2100 value (NOAA, 2017). (Note: metric units are used here to describe GMSL rise, consistent with the original reported data and figures).



Source: NOAA, 2017.

Figure 5-1 Global Mean Sea Level Rise Scenarios with Probability Ranges Under Representative Concentration Pathways

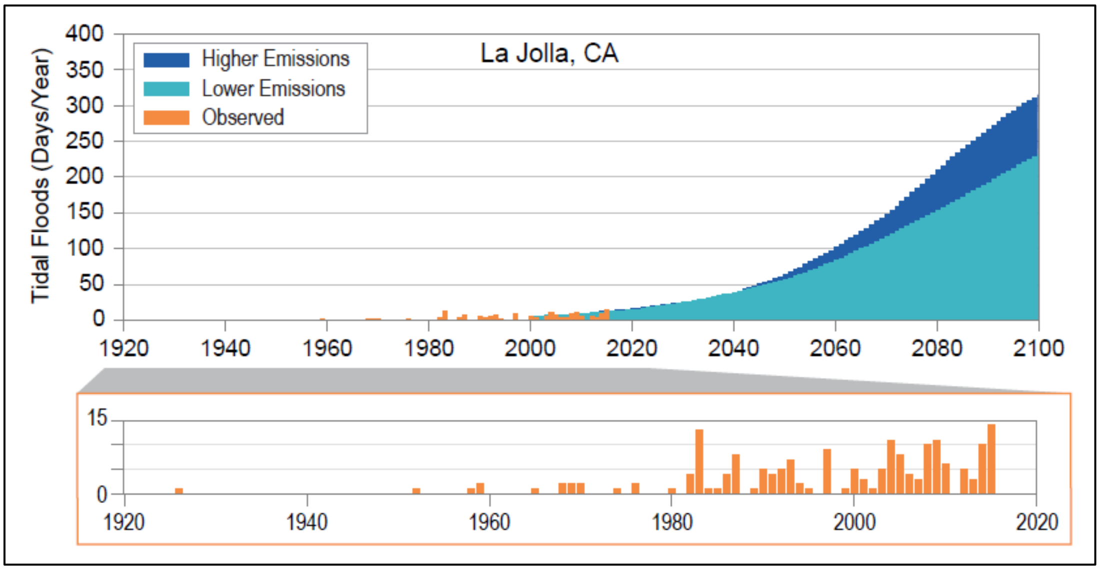
Table 5-2 shows the predicted GMSL rise constraints for 2030, 2050 and 2100, as well as the probabilities of exceeding the median value (shown in the table) by 2100, for each RCP used in the model. This shows that while extreme GMSL rise of greater than 1.5 meters, or about 5 feet, may occur, it is highly unlikely. The 90 percent probability range for all scenarios falls below 1.3 meters, or about 4 feet.

Table 5-2 Global Mean Sea Level Rise Scenarios and Probability under Representative Concentration Pathways

GMSL Rise Scenario	*Constraints*	*Probability of Exceeding GMSL (median value) Scenarios in 2100 RCP 2.6*	*Probability of Exceeding GMSL (median value) Scenarios in 2100 RCP 4.5*	*Probability of Exceeding GMSL (median value) Scenarios in 2100 RCP 8.5*
Low	2100 GMSL of 30 ± 2 cm 2050 GMSL of 15 ± 2 cm 2030 GMSL of 9 ± 1 cm	94%	98%	100%
Intermediate-Low	2100 GMSL of 50 ± 2 cm	49%	73%	96%
Intermediate	2100 GMSL of 100 ± 2 cm	2%	3%	17%
Intermediate-High	2100 GMSL of 150 ± 5 cm	0.4%	0.5%	1.3%
High	2100 GMSL of 200 ± 5 cm	0.1%	0.1%	0.3%
Extreme	2100 GMSL of 250 ± 15 cm	0.05%	0.05%	0.1%

Legend: % = percent; cm = centimeters; GMSL = global mean sea level; RCP = Representative Concentration Pathways.
Source: NOAA, 2017.

Sea level rise has caused an increase in tidal floods associated with nuisance-level impacts (NOAA, 2017). Nuisance floods are events in which water levels exceed the local threshold set by NOAA's National Weather Service for minor impacts. These events can damage infrastructure, cause road closures, and overwhelm storm drains. As sea level has risen along the California coastline, the number of tidal flood days (all days exceeding the nuisance-level threshold) has also increased, with La Jolla experiencing its greatest number in 2015 (Figure 5-2 below; La Jolla is approximately 10 miles northwest of OTC) (Frankson et. al, 2017). Continued sea level rise will present major challenges to California's water management system (Frankson et. al, 2017). FEMA has not designated flood zones within OTC and OTC is not located within a tsunami inundation zone. However, with GMSL rise, the potential for tidal flooding would be increased.



Source: Frankson et. al, 2017.

Figure 5-2 Predicted Incidences of Tidal Flooding Under High and Low Emissions Scenarios

Deteriorating water infrastructure, such as drainages or headwalls, would compound the risks associated with climate change. NOAA and the U.S. Global Change Research Program predict that extreme precipitation events are projected to increase in a warming climate and may lead to more severe floods and greater risk of infrastructure failure in some regions (Frankson et. al, 2017). Infrastructure design, operation, financing principles, and regulatory standards typically do not account for a changing climate. Current risk management does not typically consider the impact of compound extremes (co-occurrence of multiple events) and the risk of cascading infrastructure failure (NOAA, 2017). Intensifying droughts and occasional large floods, combined with critical water demands from a growing population, deteriorating infrastructure, and groundwater depletion, suggest the need for flexible water management techniques that address changing risks over time, balancing declining supplies with greater demands (Frankson et. al, 2017). These changes, which are expected to persist, present an ongoing risk of indirect effects to OTC and the surrounding area.

The incidence of large forest fires in the western United States and Alaska has increased since the early 1980s and is projected to further increase in those regions as the climate changes, with profound changes to regional ecosystems (National Climate Assessment, 2018). The temperatures observed during extreme events are projected to increase by 3°-9°F, depending on the emissions scenario used for predictive modeling (U.S. Global Change Research Program, 2017). This change in precipitation and heat could contribute to greater chances for large fires.

5.5.2 Impacts of Climate Change on the Proposed Action Alternatives

Sea level rise has the highest potential to impact the Proposed Action Alternatives. As sea levels rise, coastal and underwater infrastructure may experience stress of increased water weight and changing physical stress at hookup points (NOAA, 2017). The Proposed Action Alternatives would be located approximately 3,250 feet from the MCRD Marina, the closest connection point to San Diego Bay waters, and 4,200 feet from the San Diego River. The project sites range in elevation from approximately 9-13 feet above mean sea level. Historically, this area is not prone to flooding; however, under extreme scenarios (less than 1 percent probability) for GMSL rise, project sites could experience flooding during high tide by 2100.

Figure 5-3 shows the potential effects of sea level rise corresponding roughly to the Intermediate-low, Intermediate-high, High, and Extreme scenarios presented in Table 5-2 above. The figure shows areas in the vicinity of project sites that would be inundated at high tide under 2 feet, 4 feet, 6 feet and 8 feet of GMSL rise. As can be seen in this figure, GMSL rise would not start to directly affect portions of the Proposed Action Alternatives until about 7 feet of GMSL rise but would flood the entire footprint at high tide under the scenario of 8 feet GMSL rise. This level of GMSL rise is unlikely to occur but cannot be ruled out. Sea level rise and storm surge can also have impacts beyond the area directly affected.

While no direct impacts to this location are anticipated from future sea level rise in this century (given the anticipated elevation of the facility), the design may include flood management provisions as needed. No flood barrier or other similar protective structure would be included as part of the Proposed Action Alternatives. Any improvements to features of the Proposed Action Alternatives required to reduce the physical stress associated with a higher sea level in the future would be evaluated at such time that more detailed information becomes available.

The State of California developed strategies for adapting to future climatic effects (California Natural Resources Agency, 2018; Governor’s Office of Emergency Services, 2020). The city of San Diego proposes a similar approach through their City of San Diego Climate Action Plan (City of San Diego, 2016a). The DoD also conducts research on potential impacts from climate change and develops measures for installations to adapt to these threats, such as sea level rise (DoD Strategic Environmental Research and Development Program, 2020). Construction and operation of the Proposed Action Alternatives would implement these adaptation strategies where applicable.

5.5.3 Impact of the Proposed Action Alternatives on Climate Change

The Proposed Action Alternatives have the potential to contribute to climate change through the addition of GHG to the atmosphere, which are believed to be the driving factor of human caused climate change. The State of California has developed strategies to adapt to future climatic effects (CARB, 2017). The City of San Diego proposes a similar approach through its City of San Diego Climate Action Plan (City of San Diego, 2016a).

California is committed to reducing GHG emissions while accommodating a growing population and encouraging economic growth. The Air Resources Board Scoping Plan charts future emissions by comparing various policy options to a “business-as-usual” scenario, which represents future GHG emissions without further regulatory or policy intervention to reduce emissions.

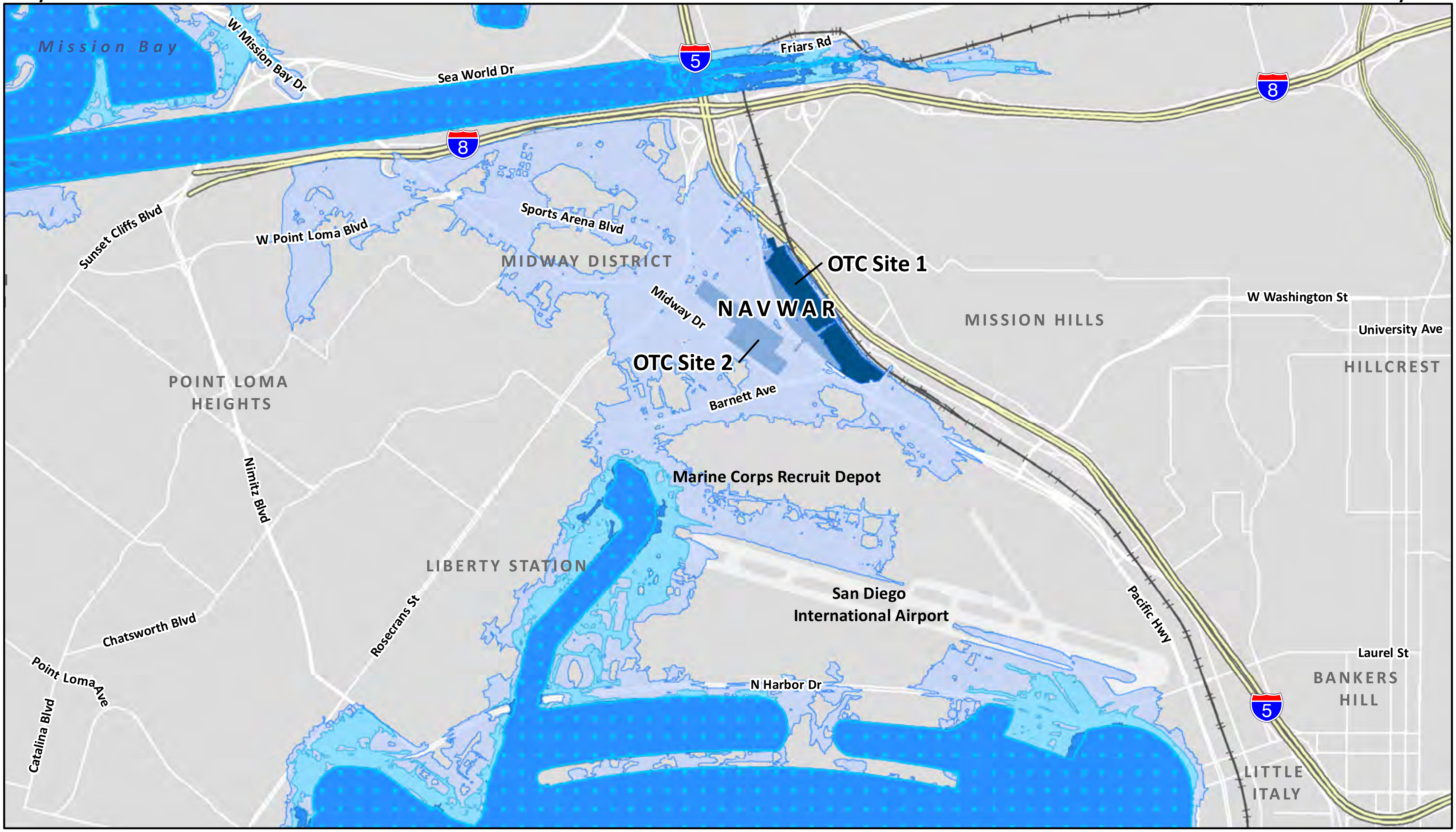


Figure 5-3. Sea Level Rise Scenarios in the Vicinity of the Project Sites

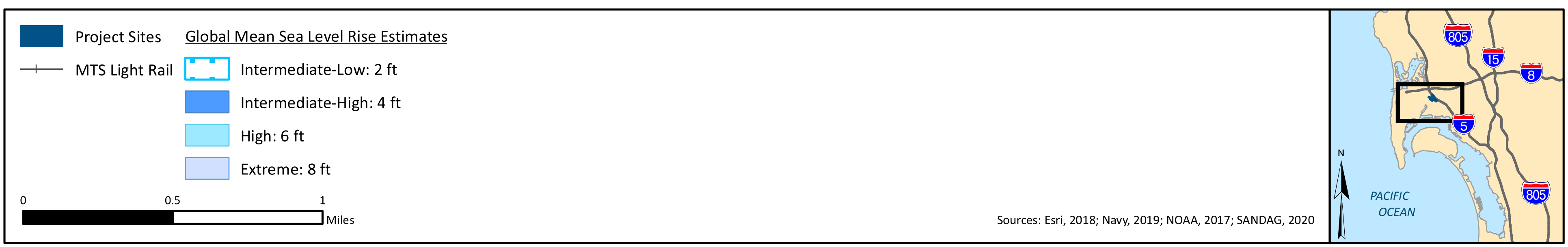
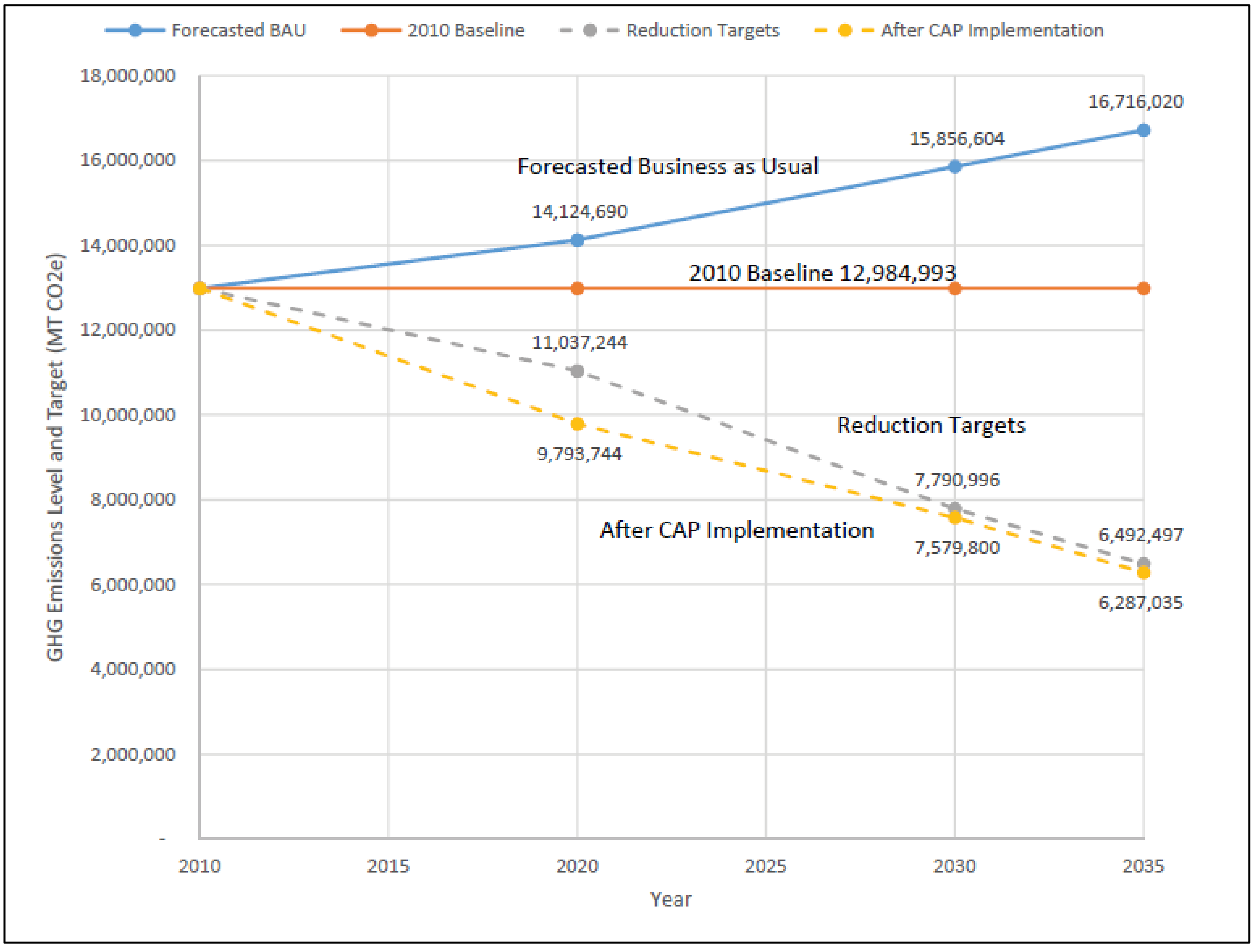


Figure 5-4 shows the City of San Diego Climate Action Plan 2010 baseline, the projected "business-as-usual" emission levels, and the City's reduction calculations for 2020 (24 percent below baseline), 2030 (41 percent below baseline) and 2035 (51 percent below baseline). The figure is displayed in metric tons of carbon dioxide equivalents (City of San Diego, 2016a). See Appendix A for a CEQA demonstration of the Preferred Alternative's consistency with the Climate Action Plan. Also see Sections 3.1.5 and 4.4.1.3 for quantification of GHG emissions associated with the Proposed Action Alternatives under NEPA and a comparison of the emissions to the most recent California GHG emissions inventory.



Source: City of San Diego, 2016a.

Figure 5-4 City of San Diego Projected GHG Emission Levels and Reduction Targets

Construction of energy- and water-efficient buildings is one of the goals outlined in the City of San Diego Climate Action Plan to reduce the quantity of GHG and stress on public infrastructure related to climate change. The DoD also conducts research on potential impacts from climate change and develops measures for installations to adapt to these threats (DoD, 2019). These goals are congruent, and energy and water efficiency standards are part of project design. In addition, the Navy takes proactive measures to reduce their overall emissions of GHG by decreasing the use of fossil fuels and increasing the use of alternative energy sources in accordance with the goals set by EOs, the Energy Policy Act of 2005, and Navy and DoD policies (refer to Appendix B for more information). Use of clean and renewable energy is also a goal outlined in the City of San Diego Climate Action Plan.

Section 4.4.1, Air Quality (Cumulative Impact Analysis) presents estimates of GHG emissions and indirect effects to climate change from each action alternative. While GHG emissions generated from each action alternative alone would not be enough to cause global warming, in combination with past and future emissions from all other sources, they would contribute incrementally to the global warming that produces the adverse effects of climate change.

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Section: Hazardous Materials

Kelsy DiGiovanni, (Katz & Associates)
A.A.S Graphic Design/Illustration
Years of Experience: 3
Sections: Public Involvement / Website / Notifications / Public Meetings

Peggy Farrell, PMP, QEP, CHMM (Leidos)
M.S. Natural Sciences and Environmental Studies
B.A. Biology and Environmental Studies
Years of Experience: 30
Sections: Public Involvement / Website / Notifications / Public Meetings

Karen Foster, RPA (Leidos)
Ph.D. Anthropology
M.A. Anthropology
B.A. Anthropology
Years of Experience: 30
Section: Cultural Resources Study

Tania Fragomeno (Katz & Associates)
B.A. Psychology
Years of Experience: 18
Sections: Public Involvement / Website / Notifications / Public Meetings

Amelia Giacalone, (Linscott, Law & Greenspan, Engineers)
B.A. Urban Studies and Planning
Years of Experience: 13
Sections: Transportation and VMT

Doug Gilkey, AICP (Cardno)
M.P.A.
B.S. Biology and Environmental Science
Years of Experience: 29
Section: Project Manager

Leah Gonzales (Cardno)
M.S. Environmental Science and Management
B.S. Environmental Systems
Years of Experience: 5
Section: Geology

Lesley Hamilton (Cardno)
B.A. Chemistry
Years of Experience: 31
Sections: Air Quality / GHG / Climate Change

Massie Hatch, PE, CPP (M.S. Hatch Consulting, LLC)
M.S. Mechanical Engineering
B.S. Mechanical Engineering
Years of Experience: 29
Section(s): Air Quality / GHG / Climate Change

Cara Hilgesen (Linscott, Law & Greenspan, Engineers)
M.C.P.
B.S. Business Administration, Real Estate Finance
Years of Experience: 13
Sections: Transportation and VMT

Seth Hopkins (Cardno)
M.A. Urban Planning
B.A. Environmental Studies
Years of Experience: 15
Sections: Infrastructure / Utilities

Caitlin Jafolla, AICP (Cardno)
B.A. Urban Studies and Planning
Years of Experience: 8
Section: Deputy Project Manager

Patrick Kester (Cardno)
B.S. Mechanical Engineering
Years of Experience: 13
Section: Noise

David Kiernan (Environment & Economics LLC)
M.S. Urban and Regional Planning
B.S. Economics
Years of Experience: 19
Sections: Socioeconomics / EJ / Growth Inducing

Laura Taylor Kung (ASM Affiliates)
M.A. Historic Preservation Planning
B.A. Art History
Years of Experience: 10
Section: Cultural Resources Study

Joey Lawson (Cardno)
B.S. Computer Engineering
Years of Experience: 12
Sections: Public Involvement / Website / Notifications / Public Meetings

Andrew Lissner, (Leidos)
Ph.D. Biology
B.S. Biology
Years of Experience: 30
Section: Project Manager

Tim Luttrell, PE (Leidos)
M.S. Civil Engineering
B.S. Civil Engineering
Years of Experience: 21
Sections: Transportation and VMT

Julie McLean (Cardno)
B.A. History
Years of Experience: 9
Sections: Public Involvement / Website / Notifications / Public Meetings

Emily Michaelson (Katz & Associates)
B.A. Sociology
Years of Experience: 11
Sections: Public Involvement / Website / Notifications / Public Meetings

Isla Nelson (Cardno)
B.A. Anthropology
Years of Experience: 19
Section: Cultural Resources Study

Marilyn Novell (ASM Affiliates)
M.S. History of Architecture and Urbanism
B.A. American Studies
Years of Experience: 10
Section: Cultural Resources Study

Geoff Olander (Cardno)
B.S. Mechanical Engineering
Years of Experience: 30
Sections: Airspace

Oliver Pahl (Cardno)
B.S. Environmental Economics Policy and Management
Years of Experience: 10
Sections: Socioeconomics / EJ / Growth Inducing

Charles Phillips (Leidos)
M.A. Biological Sciences
B.A. Biological Sciences
Years of Experience: 40
Sections: Water Resources

Ryan Pingree, AICP, CEP (Scout Environmental)
M.S. Environmental Science and Management
B.S. Physical Geography
Years of Experience: 22
Sections: Cumulative Impacts

Clint Scheuerman, CWB (Cardno)
M.A. Biological Sciences
B.S. Biological Sciences
Years of Experience: 16
Sections: Biology

Jennifer Scholl (Cardno)
B.A. Environmental Studies
B.A. Political Science International Relations
Years of Experience: 30
Section: CEQA Appendix

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B.S. Landscape Architecture
Years of Experience: 37
Section: Land Use

Richard Stolpe (Cardno)
M.A. Geography
B.A. History
Years of Experience: 17
Sections: Public Health and Safety, Coastal Consistency Determination

Sarah Stringer-Bowsher, RPH (ASM Affiliates)
M.A. Public History
B.A. History
Years of Experience: 13
Section: Cultural Resources Study

Kimberly Wilson (Cardno)
Years of Experience: 42
Sections: 508 Compliance / Administrative Record Management

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Years of Experience: 22
Section: QA/QC

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