



Draft Supplemental Environmental Assessment

VA Alameda Point Multi-Specialty Outpatient
Clinic and Columbarium

Alameda, Alameda County, California

November 25, 2020

Prepared for:
U.S. Department of Veterans Affairs
Office of Construction & Facilities Management

Prepared by:
HDR
100 Pringle Avenue, Suite 400
Walnut Creek, CA 94596

This page is intentionally left blank.

Contents

1	Introduction	1
1.1	Project Background	1
1.2	Purpose and Need	1
1.3	Scope of Analysis	2
1.4	Public Review and Agency Consultation	3
2	Description of Proposed Changes to Original Project Scope	4
2.1	Project Area	4
2.2	Description of Changes to Proposed Project	7
3	Affected Environment and Environmental Consequences of the Proposed Project	19
3.1	Summary of Changes to Potential Impacts	19
3.2	Biological Resources	22
3.3	Water Quality and Coastal Consistency	36
3.4	Transportation, Traffic, Circulation, and Parking	45
3.5	Cultural Resources	95
3.6	Air Quality, Greenhouse Gas Emissions, and Climate Change	109
3.7	Hazards and Hazardous Substances	136
3.8	Geology and Soils	146
4	List of Required Permits	151
5	References Cited	153

Appendices

Appendix A. 2013 Alameda Transfer, Clinic, and Cemetery Environmental Assessment

Appendix B. Storm Drain Study

Appendix C. Biological Resources Supporting Information

Appendix D. Final Transportation Report

Appendix E. Cultural Resources Supporting Information

Appendix F. Air Quality and Greenhouse Gas Calculations

Tables

Table 2-1. On-site Mitigation Proposed Strategy	14
Table 2-2. Construction Schedule.....	14
Table 3-1. Summary of 2013 EA Impact Conclusions for Resources not Re-evaluated in SEA.....	19
Table 3-2. Habitat Types in the Project Area (in acres).....	25
Table 3-3. Summary of Jurisdictional Aquatic Resources (in acres)	28
Table 3-4. Summary of Impacts to Biological Resources	35
Table 3-5. Beneficial Uses Designated for the Oakland Inner Harbor.....	39
Table 3-6. Summary of Impacts to Water Quality and Coastal Consistency.....	45
Table 3-7. Study Intersection Baseline Data Sources	54
Table 3-8. Level of Service Definitions for Signalized Intersections.....	56
Table 3-9. 2020 Existing Condition AM, PM, and Saturday Peak Hour Intersection Levels of Service.....	56
Table 3-10. Study CMP Arterial Segments	58
Table 3-11. 2020 Existing Condition PM Peak Hour CMP Arterial Segments Volume-to-Capacity Ratios.....	59
Table 3-12. 2020 Existing Condition PM Peak Hour CMP Freeway Segment of I-880 v/c Ratios.....	59
Table 3-13. 2020 Existing Condition Alameda-Contra Costa Transit District Bus Service in the Study Area	60
Table 3-14. Daily Trip Distribution of Employees and Clients of the Proposed Action.....	69
Table 3-15. 2025 and 2040 Proposed Action Conditions Anticipated Mode Split	70
Table 3-16. 2025 Proposed Action Condition Estimated Daily Person Trip Generation	72
Table 3-17. 2025 Proposed Action Condition Estimated Peak Hour Trip Generation by Mode	73
Table 3-18. 2040 Proposed Action Condition Estimated Daily Person Trip Generation	74
Table 3-19. 2040 Proposed Action Condition Estimated Peak Hour Trip Generation by Mode.....	75
Table 3-20. 2025 and 2040 Proposed Action Conditions Estimated Employees and Client Trip Distribution.....	75
Table 3-21. 2025 Proposed Action Condition Estimated Peak Hour Vehicle Trips of Employees and Clients.....	76
Table 3-22. 2040 Proposed Action Condition Estimated Peak Hour Vehicle Trips of Employees and Clients.....	77
Table 3-23. 2025 No Action and 2025 Proposed Action Conditions LOS Results Comparison.....	78
Table 3-24. 2025 No Action and 2025 Proposed Action Conditions PM Peak Hour CMP Arterial Segment v/c Comparison	81
Table 3-25. 2025 No Action and 2025 Proposed Action Conditions PM Peak Hour CMP Freeway Segment of I-880 v/c Comparison	82
Table 3-26. 2025 No Action and 2025 Proposed Action Conditions Alameda Segment Speed Comparison	82
Table 3-27. 2040 No Action and 2040 Proposed Action Conditions LOS Results Comparison.....	86
Table 3-28. 2040 No Action and 2040 Proposed Action Conditions PM Peak Hour CMP Arterial Segment v/c Comparison	89
Table 3-29. 2040 No Action and 2040 Proposed Action Conditions PM Peak Hour CMP Freeway Segment of I-880 v/c Comparison	89
Table 3-30. 2040 No Action and 2040 Proposed Action Conditions Alameda Segment Speed Comparison	90
Table 3-31. Proposed Action VMT per Employee in Comparison with the TAZ 964, Alameda, and Regional VMT in 2030.....	92

Table 3-32. Proposed Action VMT per Employee in Comparison to the TAZ 964, Alameda, and Regional VMT in 2040	92
Table 3-33. PPV Guideline Vibration Damage Criteria	104
Table 3-34. Federal and State Criteria Air Pollutant Standards, Effects, Sources, and Attainment Status.....	111
Table 3-35. Global Warming Potential of Greenhouse Gas	116
Table 3-36. Ambient Air Quality Monitoring Concentrations at the Oakland West Monitoring Station and San Francisco Station	123
Table 3-37. De Minimis Thresholds for the San Francisco Bay Area Air Basin	127
Table 3-38. BAAQMD Odor-Screening Distances	128
Table 3-39. Daily Construction Emissions (pounds per day).....	129
Table 3-40. Annual Construction Emissions (tons per year)	129
Table 3-41. Construction Greenhouse Gas Emissions.....	130
Table 3-42. 2025 Daily Operational Emissions.....	131
Table 3-43. 2040 Daily Operational Emissions.....	131
Table 3-44. 2025 Annual Operational Emissions	131
Table 3-45. 2040 Annual Operational Emissions	132
Table 3-46. 2025 Annual Greenhouse Gas Emissions.....	134
Table 3-47. 2040 Annual Greenhouse Gas Emissions.....	135
Table 3-48. Basic Construction Mitigation Measures Recommended for All Projects	135
Table 3-49. Summary of Impacts to Hazards and Hazardous Substances.....	145
Table 3-50. Summary of Impacts to Geology and Soils	150
Table 4-1. Permits, Approvals, and Reviews	151

Figures

Figure 2-1. Regional Project Location.....	5
Figure 2-2. VA Transfer Parcel and Development Area	6
Figure 2-3. Site Plan	8
Figure 2-4. Proposed Activity Components	9
Figure 2-5. Permanent Wetlands Impacts of the Proposed Project.....	11
Figure 2-6. Existing Conditions in the Wetland Mitigation Area.....	12
Figure 2-7. Wetland Mitigation Area Overview	13
Figure 2-8. Temporary Construction Footprint of Disturbance for Development Area	16
Figure 2-9. Proposed Water Quality Control Features	17
Figure 3-1. VA Transfer Parcel Vicinity Map.....	48
Figure 3-2. Study Intersections and Roadways (North).....	50
Figure 3-3. Study Intersections and Roadways (South)	51
Figure 3-4. 2020 Existing Condition Alameda-Contra Costa Transit District Bus Routes in the Study Area (North).....	61
Figure 3-5. 2020 Existing Condition Alameda-Contra Costa Transit District Bus Routes in the Study Area (South)	62
Figure 3-6. 2020 Existing Condition Bicycle Network in the Study Area (North).....	65
Figure 3-7. 2020 Existing Condition Bicycle Network in the Study Area (South)	66
Figure 3-8. Preferred Truck Route and City of Alameda Truck Routes	94
Figure 3-9. Location of Alameda Training Wall Contributing and Noncontributing Segments	103
Figure 3-10. Location of Potential DDC Activity.....	105
Figure 3-11. Location of Potential DDC Activity Overlapping with Alameda Training Wall	105
Figure 3-12. Location of Potential DDC Activity Overlapping with NAS Alameda Historic District.....	106
Figure 3-13. Detail Showing Location of Potential DDC Activity Overlapping with NAS Alameda Historic District.....	107
Figure 3-14. Detail Showing Location of Off-site Utility Trenches	108

Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
AB	Assembly Bill
ACMs	asbestos-containing materials
AC Transit	Alameda-Contra Costa Transit District
ACTC	Alameda County Transportation Commission
ACTD Model	Alameda County Travel Demand Model
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BAU	business as usual
BCDC	Bay Conservation and Development Commission
Bio-CO ₂	biological carbon dioxide
BMP	best management practice
BO	Biological Opinion
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA Act	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
City	City of Alameda
CLR	Cultural Landscape Report of Naval Air Station Alameda
CMO	Conservation Management Office
CMP	Congestion Management Program
CNDDDB	California Natural Diversity Database

CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
Combined Evaluation Report	<i>Combined Specific Buildings Survey and Evaluation Report/Cold War Era Historic Resources Survey and Evaluation Report</i>
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dBA	A-weighted decibels
DDC	deep dynamic compaction
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EA	environmental assessment
EB	eastbound
EBMUD	East Bay Municipal Utility District
EIR	environmental impact report
EIS	environmental impact statement
EO	Executive Order
FCAA	Federal Clean Air Act
FGC	California Fish and Game Code
FONSI	finding of no significant impact
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
I-580	Interstate 580
I-80	Interstate 80
I-880	Interstate 880
I-980	Interstate 980
IC	institutional control
LOS	level of service
MM	mitigation measure
MOA	Memorandum of Agreement
MS4	municipal separate sewer system
msl	mean sea level

MT	metric ton
MTC	Metropolitan Transportation Commission
N ₂ O	nitrous oxide
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAS	Naval Air Station
Navy	United States Navy
NB	northbound
NBio-CO ₂	nano-biological carbon dioxide
NCA	National Cemetery Administration
NCCP	natural community conservation plan
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O ₃	ozone
OAAP	Oakland-Alameda Access Project
OPC	outpatient clinic
PCBs	polychlorinated biphenyls
PFC	perfluorocarbon
PM ₁₀	particulate matter of 10 micrometers and smaller
PM _{2.5}	particulate matter of 2.5 micrometers and smaller
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
ROG	reactive organic gas
RPS	Renewable Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

SB	southbound
SEA	supplemental environmental assessment
SFBAAB	San Francisco Bay Area Air Basin
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SR	State Route
TAZ	transportation analysis zone
TMDL	total maximum daily load
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
v/c	volume-to-capacity [ratio]
VA	Department of Veterans Affairs
VBA	Veterans Benefits Administration
VHA	Veterans Health Administration
VMT	vehicle miles traveled
VOC	volatile organic compound
Water Board	California State Water Resources Control Board
WB	westbound

1 Introduction

1.1 Project Background

Pursuant to the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500 to 1508) implementing provisions of the National Environmental Policy Act (NEPA) and the Department of Veterans Affairs (VA) regulations for implementing NEPA (Environmental Effects of VA Actions [38 CFR Part 26]), the VA and the United States Navy (Navy) jointly prepared an environmental assessment (EA) to identify and assess the environmental impacts of the proposed project (Appendix A, *2013 Alameda Transfer, Clinic, and Cemetery Environmental Assessment*; VA and Navy 2013). The proposed project evaluated in the 2013 EA consisted of the Navy's transfer of excess federal property, and the VA's development of a portion of that property for an outpatient clinic (OPC), veteran-services offices, and a National Cemetery at the former Naval Air Station (NAS) Alameda in the city of Alameda, California.

The final EA for the proposed project was completed in November 2013 and resulted in a finding of no significant impact (FONSI). Since the VA and the Navy completed the 2013 EA, the scope of the VA's portion of the original project has been expanded to include implementing on-site wetland mitigation commitments and constructing stormwater management and water quality control structures. This supplemental EA (SEA) has been prepared to evaluate the environmental impacts of the proposed changes to the original project scope. In addition, transportation and air quality-related resources were re-assessed using current standards and updated information, given the age of the previous analyses and the changes in the affected environment.

1.2 Purpose and Need

The VA's purpose and need for the proposed project remains the same as described in the 2013 EA. The VA's purpose for the proposed project is to establish a single location for combined services consistent with the national "One VA" goal, which advocates consolidating services wherever possible to ensure that the most centralized, coordinated, and efficient care and services are provided to veterans in a local area.

The VA's need for the proposed project is to serve, care for, honor, and memorialize San Francisco Bay Area veterans in a manner that addresses the area's current and future capacity needs and provides a greater range of services at one location.

"One VA" goal

The proposed action would establish a single location for combined services—consistent with the national "One VA" goal, which advocates consolidating services wherever possible to ensure the most centralized, coordinated, and efficient care and services for veterans.

1.3 Scope of Analysis

This SEA examines the environmental impacts that would result from the proposed changes to the original project scope. The alternatives considered remain the same as in the 2013 EA. This SEA also considers the same No Action Alternative as the 2013 EA, in which the existing conditions in the project area would continue, and no VA facilities would be constructed on the site.

Because the proposed changes to the original project scope would not change the analysis of the No Action Alternative, the No Action Alternative is not discussed further in this SEA. The reader is directed to the 2013 EA (Appendix A) for a description of the No Action Alternative and discussion of its impacts.

Given that no substantial increases in effects are anticipated as a result of adding the new elements to the proposed project, including the on-site wetland mitigation and stormwater management and water quality control facilities, the VA has retained the analyses and impact determinations established in the 2013 EA for the following resources: groundwater and hydrology; visual resources and aesthetics; land use; socioeconomic and environmental justice; water supply, wastewater, energy, and solid waste disposal; noise; and public services. Therefore, these resources are not reassessed in this SEA. To the extent possible, the background information, settings, and effects determinations established in the 2013 EA for these resources are also incorporated by reference.

Alternatively, with incorporation of the new project elements into the proposed project, a reassessment of impacts as defined under NEPA has been included as part of this SEA for the following resources: biological resources; water quality and coastal consistency (including stormwater drainage systems); transportation, traffic, circulation, and parking; cultural resources; air quality, greenhouse gas (GHG) emissions, and climate change; hazards and hazardous substances; and geology and soils.

Transportation, traffic, circulation, and parking; and air quality, greenhouse gas emissions, and climate change required updated modeling and analyses for the entire project (including the OPC, CMO, veteran-services offices, and National Cemetery) using current standards and updated information given the age of the previous analyses and the changes in the affected environment (such as population increases, increases in vehicle usage, changes in atmospheric conditions and air quality attainment statuses). These factors are uniquely relevant to the analysis of impacts to transportation, traffic, circulation and parking; air quality, greenhouse gas emissions, and climate change, and thus are re-assessed for impacts from previously analyzed project elements in this SEA.

Mineral resources, agriculture and forestry resources, and population and housing were eliminated from consideration in the 2013 EA given that they were determined to experience no substantial impacts from the proposed project. Likewise, the newly proposed project elements would not affect these resources. Therefore, these resources are excluded from further analysis in this draft SEA as well.

1.4 Public Review and Agency Consultation

This Draft SEA is available for public review and comment for 45 days; comments are due no later than February 1, 2021, to glenn.elliott@va.gov. The VA published a Notice of Availability in both the *East Bay Times* on December 18, 2020 and the *Alameda Sun Times* on December 24, 2020.

2 Description of Proposed Changes to Original Project Scope

2.1 Project Area

As described in the 2013 EA, the VA's proposed project includes the construction and operation of a Veterans Health Administration (VHA) OPC, Veterans Benefits Administration (VBA) Outreach Office, National Cemetery Administration (NCA) National Cemetery, Conservation Management Office (CMO), and associated infrastructure on the former NAS Alameda Airfield in Alameda. The Navy transferred the former 624-acre NAS Alameda property (referred to as the VA Transfer Parcel) to the VA through a federal agency-to-federal agency transfer on June 27, 2014.

The VA Transfer Parcel encompasses the former airfield area, which consists of inactive runways and support facilities. A colony of the endangered California least tern (*Sterna antillarum browni*) is located within a 9.7-acre fenced area of the former airfield. Within the VA Transfer Parcel, the Navy is remediating landfill and disposal areas. With the exception of the ongoing management for CLT and landfill remediation, the VA Transfer Parcel is vacant and unused.

The VA Transfer Parcel is bordered by San Francisco Bay to the west and south and by the remainder of the former NAS Alameda property, now owned by the City of Alameda (City) and referred to as Alameda Point, to the north and east. Most of the VA Transfer Parcel is located in Alameda County, but a small portion in the southwestern corner of the parcel is located in San Francisco County. Regional vehicle access routes to the VA Transfer Parcel include Interstate 880 (I-880), Interstate 980 (I-980), and the Webster and Posey Street tubes. Major arterial streets serving Alameda Point include Atlantic Avenue (Ralph Appezato Memorial Parkway), Willie Stargell Avenue, Pacific Avenue, Central Avenue, Webster Street, and Constitution Way. See Figure 2-1 for the regional project location.

The proposed VA Development Area, which is where the VA would construct the proposed services buildings and associated infrastructure, is situated on 112 acres in the northwestern portion of the VA Transfer Parcel. The VA Transfer Parcel and Development Area are shown on Figure 2-2. In addition to the area proposed for facilities development, the proposed project includes the areas designated for the on-site wetland mitigation commitments (at least 25.1 acres total of created and enhanced habitat), and stormwater management and water quality control structures. On-site utilities would be constructed within the VA Development Area, and off-site utilities would be constructed outside the VA Transfer Parcel, under easements on City property north of the parcel.

Figure 2-1. Regional Project Location

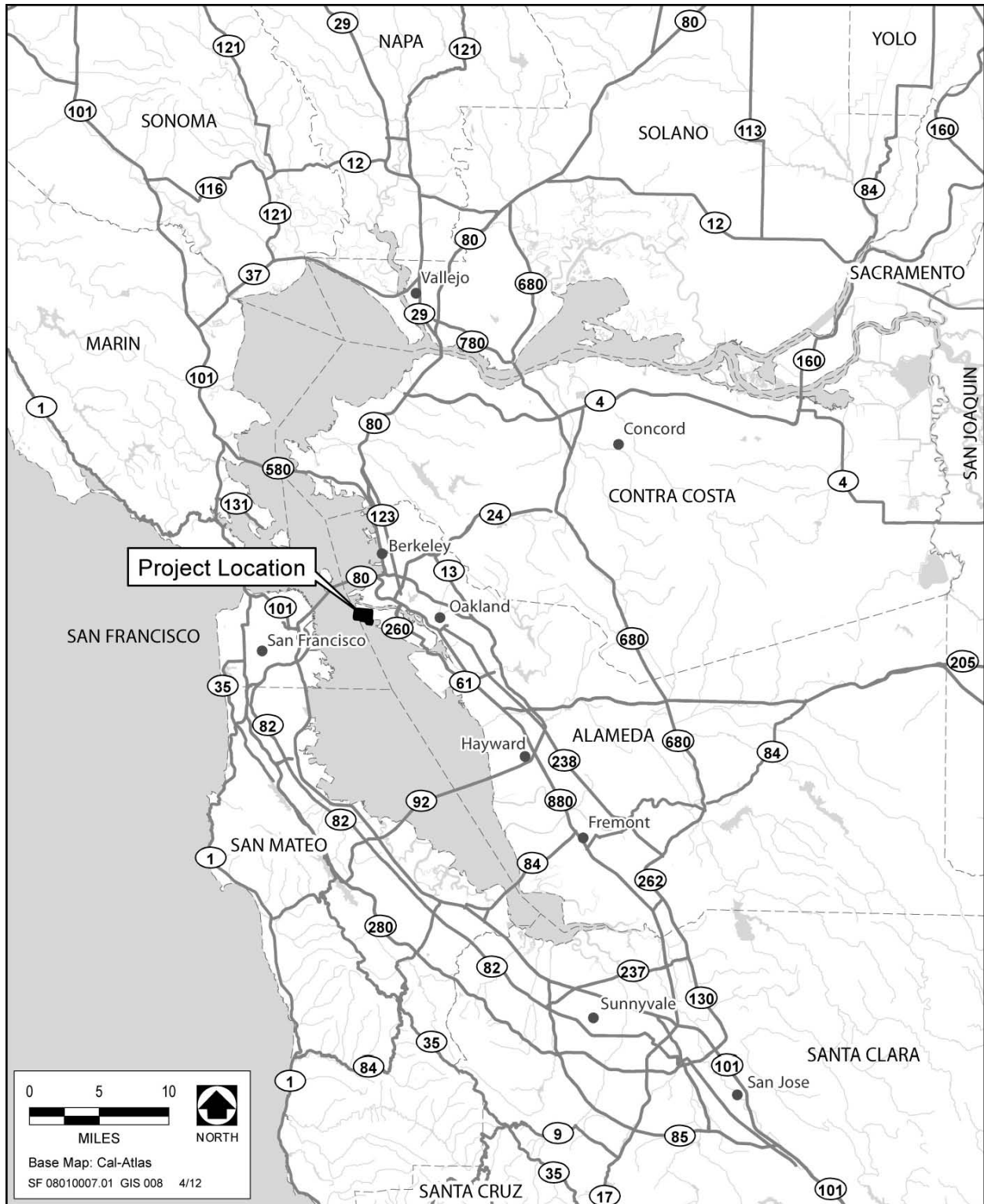
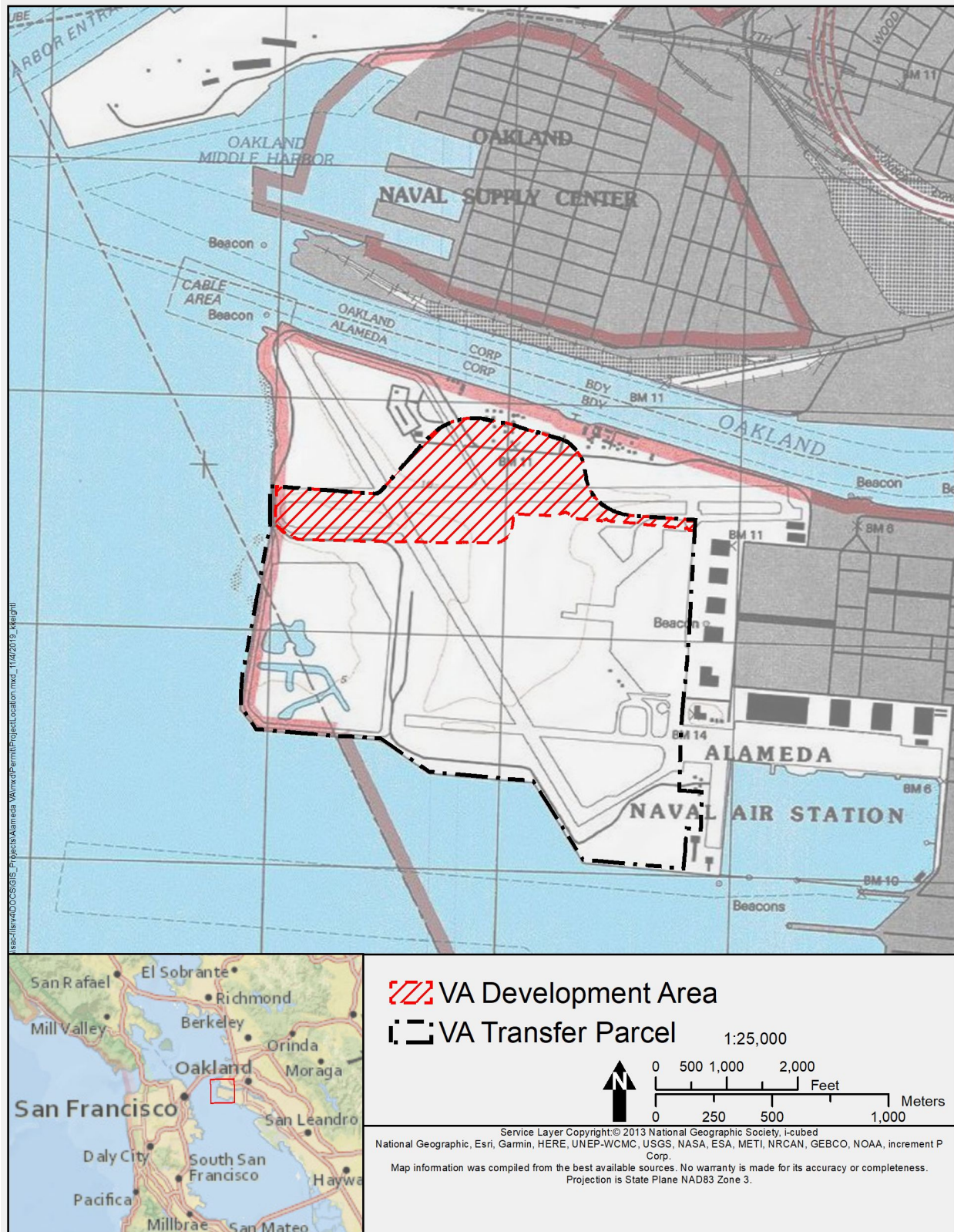


Figure 2-2. VA Transfer Parcel and Development Area



2.2 Description of Changes to Proposed Project

As analyzed in the 2013 EA (Appendix A, *2013 Alameda Transfer, Clinic, and Cemetery Environmental Assessment*), the VA proposes to construct the VHA OPC, VBA Outreach Office, NCA National Cemetery, CMO, new access road (along the northern boundary of the VA Development Area), and tie-ins and upgrades to existing underground off-site utility lines. The proposed site plan is shown on Figure 2-3.

The proposed changes to the original project scope include implementing on-site wetland mitigation commitments and constructing stormwater management and water quality control structures. These changes to the original project scope are described in further detail below. In addition to the proposed changes to the original project scope, the original development layout for the VHA OPC, VBA Outreach Office, and NCA National Cemetery, as analyzed in the 2013 EA, would have filled about 12 acres of wetlands over the course of the 120-plus-year development. During early coordination with agencies, the VA determined that the original development layout would have too great an impact on existing wetlands and, subsequently, the development layout was revised to reduce impacts. Figure 2-4 shows components of the proposed activity. The discussion of and associated figures for the VA Development Area analyzed in this SEA reflect the revised and current layout.

As discussed, in Section 1.3, *Scope of Analysis*, due to the age of the previous transportation analysis in the 2013 EA, the transportation, traffic, circulation and parking analysis provided in this SEA was updated to reflect current conditions and includes the project as a whole (including the OPC, CMO, veteran-services offices, and National Cemetery). The VA currently owns and operates a shuttle between Martinez clinic to and from the current Oakland clinic, encompassing six daily trips. The shuttle capacity includes 16 passengers or 12 passengers with two wheelchairs, and the current total average daily ridership is 25 passengers. This shuttle would be re-routed to include a new stop at the VA Transfer Parcel in the future with the service anticipated to add another vehicle. The proposed project includes the addition of a bus stop at the proposed facilities. Further, the existing VA shuttle service would add a stop at the Fremont BART station as part of the proposed project. The shuttle service is discussed further in Section 3.4, *Transportation, Traffic, Circulation, and Parking*.

Figure 2-3. Site Plan



Figure 2-4. Proposed Activity Components



2.2.1 On-site Wetland Mitigation

The proposed project, including all future phases of cemetery construction (that is, up to 13 phases over 120-plus years), would be constructed in the 112-acre VA Development Area, which is a portion of the total 624-acre VA Transfer Parcel. In February 2013, the VA obtained a preliminary jurisdictional determination from the United States Army Corps of Engineers (USACE, 2013). The delineation identifies 75.3 acres of potentially jurisdictional wetlands within the VA Transfer Parcel. Following revisions to the project footprint of disturbance to minimize wetland impacts, including those impacts that would result from all future phases of cemetery construction, the proposed project would cause unavoidable discharges of fill to a total of 10.85 acres of waters of the United States, as shown on Figure 2-5.

Initial construction of the OPC, VBA outreach offices, CMO, and Phase 1 of the National Cemetery, planned for construction in 2021 to 2025 (shaded light blue on Figure 2-5), would cause the loss of 3.6 acres of potentially jurisdictional wetlands. These impacts would be compensated for by purchasing 3.6 acres of wetland mitigation credits at the USACE and San Francisco Bay Regional Water Quality Control Board (RWQCB)-approved San Francisco Wetland Mitigation Bank. Future decadal phases of cemetery construction would be compensated for by early creation of at least 7.3 acres of tidal marsh wetlands on site.

Because evolution and establishment of natural systems involves some uncertainty, the VA has designed for 8 acres of wetlands at the on-site location to ensure that the outcome is at least 7.3 acres of functional tidal wetlands. In addition, the on-site mitigation strategy includes constructing a transition zone adjacent to the proposed tidal marsh creation area and enhancing existing tidal marsh and salina habitat east of the area proposed for the new tidal wetlands. Figure 2-6 shows existing conditions in the wetland mitigation area, while Figure 2-7 provides a detailed overview of the wetland mitigation area. Table 2-1 summarizes the proposed on-site mitigation strategy.

Figure 2-5. Permanent Wetlands Impacts of the Proposed Project

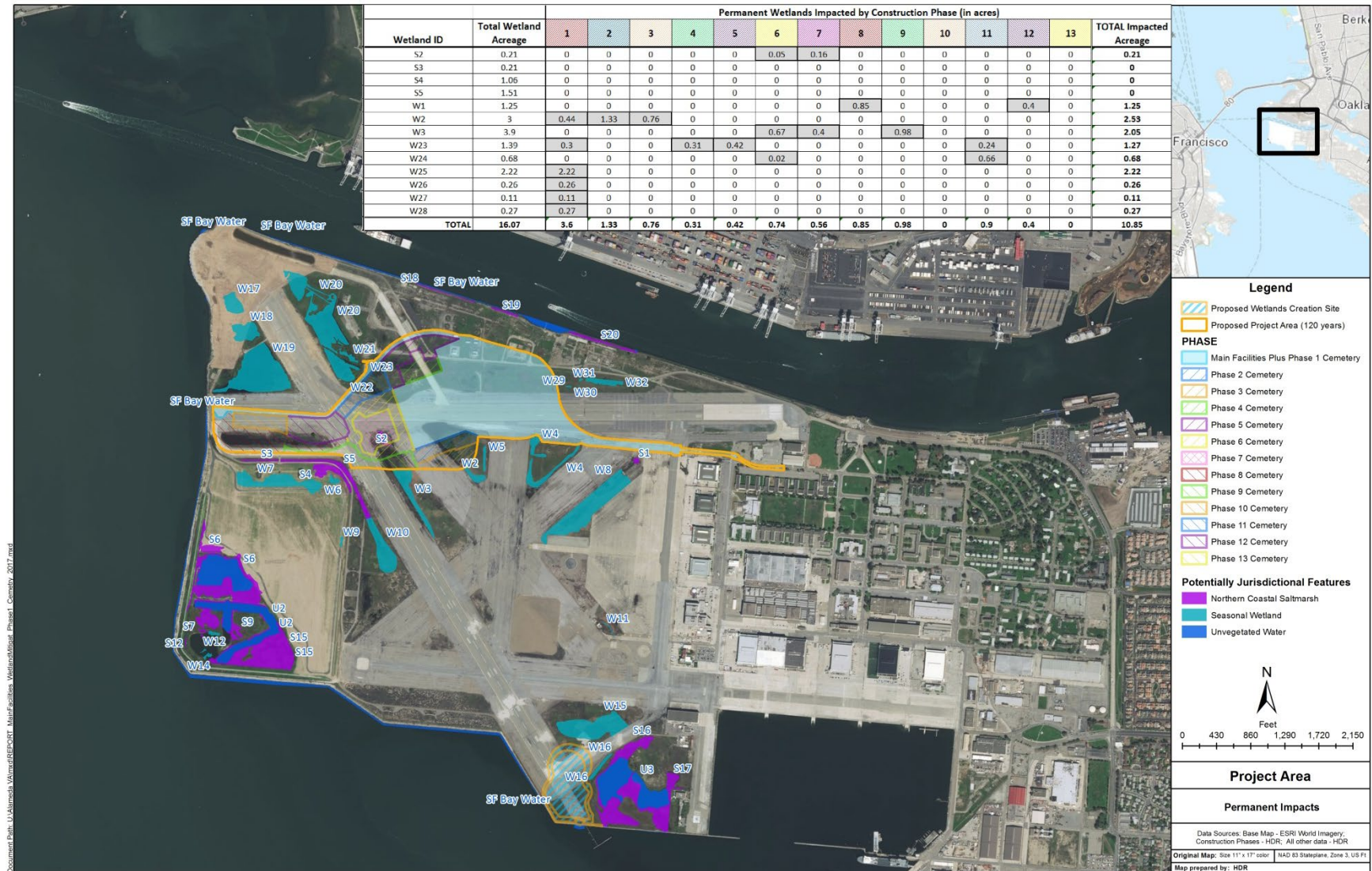
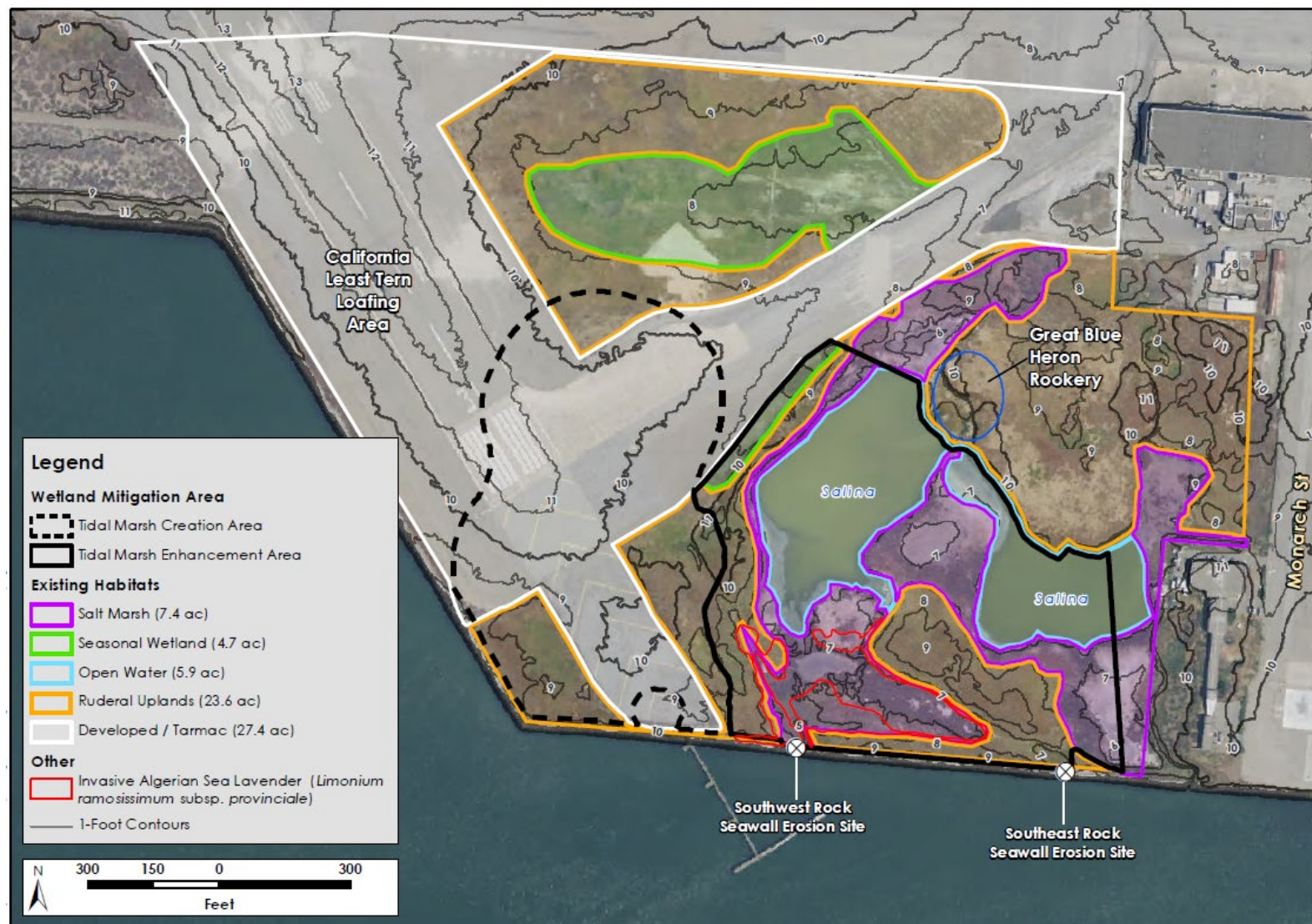


Figure 2-6. Existing Conditions in the Wetland Mitigation Area



Source: H.T. Harvey & Associates (2019a)

Figure 2-7. Wetland Mitigation Area Overview



Source: H.T. Harvey & Associates (2019b)

Table 2-1. On-site Mitigation Proposed Strategy

Habitat Mitigation Type	Proposed Mitigation Area	Mitigation Description
Tidal marsh wetlands creation	At least 7.3 acres	Excavate uplands and tarmac to elevations suitable for tidal marsh, construct tidal inlet and pilot channels, and vegetate the tidal marsh plain.
Transition zone creation	3.3 acres	Excavate uplands and tarmac to create and revegetate a transition zone (from created marsh to uplands) with slopes ranging from 10:1 to 30:1 to provide the created marsh with resilience to sea level rise.
Tidal marsh, salina, and transition zone enhancement	14.8 acres	Control invasive plants and enhance native plant diversity in the existing tidal marsh and transition zone via planting.
Total created and enhanced habitat	At least 25.4 acres	—

Construction of the on-site wetlands would occur at the same time as construction of the OPC, VBA outreach offices, CMO, and Phase 1 of the National Cemetery (see Table 2-2, which displays the anticipated sequencing of individual project components by quarter over calendar years 2021 to 2025). Phase 2 of cemetery construction would not occur until at least 10 years after Phase 1. This concurrent construction would minimize any temporal loss of wetlands, since the new on-site wetlands would have at least 10 years to establish. In addition, existing on-site wetlands that are adjacent to the proposed wetland-creation area would be enhanced by removing invasive plant species and replacing them with native plants, according to specifications.

Table 2-2. Construction Schedule

	2020	2021				2022				2023				2024				2025			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Offsite Utilities																					
Wetlands Mitigation Area*																					
Site Preparation																					
Columbarium Phase 1 Construction																					
OPC and other Facilities Construction																					

*Construction timeline for wetlands reflects compliance with USFWS BO restrictions during nesting and rearing for CA Least Tern and NMFS BO avoidance of in-water work during presence of salmonids in SF Bay.



Surcharge Settlement

The wetland mitigation enhancement activities would cause minor, temporary impacts on up to 1.34 acres of existing jurisdictional wetlands in the wetland mitigation area as a result of a combination of invasive plant control (1.25 acres) and associated vehicle access for invasive plant control work (0.09 acre); more information is provided in the next paragraph. These temporary impacts would be restored in place during the same year as construction.

Workers might trample native tidal marsh and seasonal wetland vegetation while walking through the marsh to hand-pull, string-trim, or apply herbicide to invasive plants in the wetland mitigation area. Workers might kill a small proportion of the native plants at the site and temporarily reduce native plant cover in the marsh when using herbicide to control invasive plants (1.25 acres). In addition, vehicle access across existing tidal marsh habitat might be necessary for the initial removal of invasive plants in the wetland mitigation area. Vehicles could crush native tidal marsh vegetation to access an adjacent upland area for invasive plant control (0.09 acre). A laminated crane mat or similar level of protection would be used to protect the marsh surface during vehicle access.

Additionally, the tidal marsh creation activities would require installing a temporary cofferdam to dewater the seawall in order to install the tidal inlet. This would cause temporary impacts to 0.16 acre of shallow estuarine open waters directly adjacent to the seawall in San Francisco Bay. The cofferdam would be removed following construction of the inlet.

2.2.2 Stormwater Management and Water Quality Control

Outfalls for existing storm drains, constructed to provide stormwater discharge for the former NAS Alameda, are located north of the City's adjacent property and discharge into the Oakland Inner Harbor. However, these existing outfalls have failed to varying degrees, and what remains would not provide sufficient drainage to support the proposed new facilities. Therefore, the proposed project includes construction of three additional storm drains, one of which would be capped for future use by the City, as well as other stormwater management and water quality control structures, which are described in further detail below. Implementation of new storm drains on City property were approved in the City's 2013 *Alameda Point Project Environmental Impact Report* (EIR).

An assessment of existing storm drainage features in the VA Development Area and vicinity was conducted in 2016 (Appendix B, *Storm Drain Study*), and the results indicated that, because of their age, the drains are not in usable condition and are generally degraded or failed. As a result, two new 36-inch-diameter drainage pipes (numbers 4 and 6) to the bay would be installed, and stormwater management and water quality control structures would also be constructed as shown on Figure 2-8 and Figure 2-9. A 24-inch-diameter pipe would be installed for future City use; the pipe would share an outfall location with the VA's drainage pipe number 6 and would be capped until the City builds out the area north of the VA property. The drainage pipes would be installed by removing asphalt and concrete surfaces and excavating to a maximum depth of 10 feet. All drainage pipes would be constructed of HDPE. Once the new drainage pipes and junction boxes are in place, the excavated area would be backfilled with clean, properly sourced fill and asphalt/concrete surfaces would be reconstructed. All of the proposed drainage pipe installation work would occur in uplands, and excavated materials would be disposed of properly at the on-site soil disposal area. The soil disposal area location is shown in Figure 2-4, but final determination would be made prior to construction.

Figure 2-8. Temporary Construction Footprint of Disturbance for Development Area



Figure 2-9. Proposed Water Quality Control Features



In addition, two existing drainage pipes and associated outfalls would be jetted and cleaned as a part of the stormwater management system. The remaining deteriorated NAS Alameda drainage pipes that are not included in the proposed VA facility stormwater management plan would be abandoned in place.

To construct the two new outfall structures, a construction work area would need to be temporarily dewatered in the harbor to allow access for trenching, shoreline slope stabilization, and flared concrete end section installation. Dewatering would be accomplished by installing two temporary cofferdams around the outfall locations. Cofferdams would be constructed by driving sheet piles with a vibratory hammer to a depth of 10 feet into the substrate. Any existing slope stabilization that may impede cofferdam installation would be temporarily removed. All cofferdam construction would occur at low tide. Once the cofferdams are installed and the work areas have been dewatered, the outfall areas would be excavated to subgrade to allow for outfall construction and installation of rock slope protection. All equipment would be staged on land and work would be conducted inside of the cofferdam/containment. Upon completion of construction, the sheet pile cofferdams would be removed using a vibratory hammer. Easements would be obtained from the City for all storm drains—for constructing the two new outfall structures and cleaning the two existing pipes and outfalls—across the City land that is between the proposed VA Development Area and the estuary; longer-term maintenance easements would also be obtained to maintain the new and existing drains into the future.

In addition to the drainage pipes and outfalls, the proposed action includes construction of other stormwater management and water quality control structures located in upland areas. Bioswales and biofiltration ponds would be used adjacent to roads and parking areas to provide infiltration and reduce sediment runoff from stormwater for these impervious areas; they would also provide water quality treatment for runoff. The water quality control features are shown on Figure 2-8. Maintenance would be performed periodically to remove sediment from bioswales, retention ponds, and outfalls to maintain the hydraulic capacity of the stormwater conveyances and treatment features.

3 Affected Environment and Environmental Consequences of the Proposed Project

3.1 Summary of Changes to Potential Impacts

The new components of the proposed project (that is, the storm drains and the wetlands mitigation area) were considered for both construction and operational impacts. The criteria for evaluating potential impacts are the same as in the 2013 EA. Given the age of the transportation, air quality, and GHG assessments, these three resources were reassessed in this SEA with all project components, including those features evaluated in 2013 coupled with the new components, incorporated. Table 3-1 summarizes the 2013 EA impact findings for environmental resource that were not re-evaluated in this SEA.

Table 3-1. Summary of 2013 EA Impact Conclusions for Resources not Re-evaluated in SEA

Environmental Resource	Potential Impact
Water resources (other than water quality and coastal consistency)	As noted in the 2013 EA, the proposed project would not have a substantial impact on water resources, including water quality, groundwater, floodplains, and coastal resources. During the construction period, excavation and grading activities would expose soil to water runoff and entrain sediment in the runoff. Through compliance with permit requirements and applicable regulations, construction-related impacts on water quality would not be substantial. The proposed final elevation for the developed areas would be above the Federal Emergency Management Agency base 100-year flood elevation of 7 feet above mean sea level. The proposed project would be consistent with the Coastal Zone Management Act and the provisions of the San Francisco Bay Plan.

Environmental Resource	Potential Impact
Utilities (other than stormwater drainage systems)	<p>The City owns the storm drain, wastewater collection systems, and electrical and telephone systems into which the proposed VA facilities would be tied, and the East Bay Municipal Utility District (EBMUD) owns and operates the potable water system into which the proposed VA facilities would be tied.</p> <p>The water (potable and non-potable) required and wastewater generated by construction activities would be supplied by portable sources (for example, water trucks, portable toilets) and/or existing sources until such time as installation of the new services is complete. These sources would be adequate to meet demands during construction activities, and new or expanded entitlements and resources would not be required. Therefore, implementation of the proposed project would have no substantial impact on regional potable and non-potable water supplies or wastewater systems. For operations, the facilities would not be expected to have a significant impact on the future capacity and infrastructure of the regional water or wastewater systems due to construction of new lines on site and within an off-site utility corridor.</p> <p>The use of construction equipment would not affect existing regional energy infrastructure, such as electricity or natural gas systems, because construction activities would be temporary and involve using vehicles and mobile equipment that would be fueled from sources off site. Therefore, construction-related energy use associated with project implementation would not have a substantial impact on regional energy systems. Further, the existing Alameda Municipal Power electric and PG&E natural gas system would be expected to have sufficient capacity to meet any future energy demands resulting from implementation of the proposed project. Therefore, implementation of the proposed project would not be expected to have a significant impact on the future capacity and infrastructure of the electrical and natural gas systems.</p> <p>The anticipated volume of construction waste would be expected to be accommodated by landfills located in the region, including the Altamont Landfill (Livermore, California), the primary current disposal location for the City's solid waste. Therefore, construction-related wastes associated with implementation of the proposed project would not have a significant impact on regional landfills or waste disposal facilities. Additionally, proposed operational activities would not generate solid waste that would exceed the capacity of regional landfills. Therefore, solid wastes generated under the operation of proposed facilities would not have a significant impact on regional landfills and disposal facilities.</p>
Visual resources and aesthetics	<p>As noted in the 2013 EA, the proposed project would not have a substantial impact on visual resources and aesthetics. Landscaping, landform, and perimeter barrier measures would not add any substantial vertical elements, but would reduce the amount of new development visible from surrounding areas. The structures proposed would be located in the central and/or inner portions of the VA Development Area that are less visible from outside the boundary than locations along the perimeter. For the most part, the buildings proposed would not be visually dominant relative to the flat foreground portions of the site. In addition, views of these new buildings from outside the VA Development Area would be set back sufficiently from the boundaries to render them visually subordinate to other visible features. In addition, the visual character would be improved compared with existing conditions.</p> <p>Construction activity, as well as most proposed operations, would occur during daytime hours. Some security lighting would be required in construction staging areas, which would have a minimal effect on the area's ambient light levels. The construction contractor would use lighting features that would be shielded and directed downward to minimize light spillover to neighboring undeveloped land. Most proposed operations would take place during daytime hours. Nighttime lighting would consist primarily of shielded and downward-directed low-level security lights. Because the proposed facilities would be set back from the boundaries of the VA Transfer Parcel, night lighting would not be substantially noticeable from the east or to the CLT colony to the south.</p>

Environmental Resource	Potential Impact
Land use	<p>As noted in the 2013 EA, the proposed project would not have a substantial land use impact. The proposed project would not physically divide an established community or conflict with substantive requirements of local land use plans or policies (as federally owned property, the VA Transfer Parcel would be outside the jurisdiction of local and state planning and zoning laws and regulations). It would be compatible with and would not have a substantial adverse impact on the existing character and planned uses of the surrounding community.</p>
Socioeconomics and environmental justice	<p>As noted in the 2013 EA, the proposed project would not have a substantial socioeconomics and environmental justice impact. Construction and operation would result in positive growth in both construction and operational employment. No adverse impact related to the displacement of persons, residences, and/or businesses would occur. The communities surrounding the VA Transfer Parcel do not have disproportionally high minority or low-income populations. In addition, no specific impacts on general health or quality of life would adversely or disproportionately affect the surrounding population.</p>
Noise	<p>As noted in the 2013 EA, the proposed project would not result in any substantial short- or long-term impact on noise. Noise levels during initial construction under the proposed project are projected to be less than 55 A-weighted decibels (dBA) at the nearest sensitive human receptors, and off-site construction traffic would not result in a substantial increase in the ambient noise environment.</p> <p>Cofferdam construction for the installation of the two new outfalls would require the use of a vibratory hammer to a depth of at least 10 feet. Upon completion of construction, the sheet pile cofferdams would be removed using a vibratory hammer. These activities could result in short-term impacts on vibration. However, because there are no existing on-site human sensitive receptors (that is, residences and inpatient facilities), and because off-site human sensitive receptors would be a minimum of 3,700 feet from the proposed development, construction of the proposed project would occur well beyond threshold distances and would not expose any sensitive human receptors to excessive levels of vibration.</p> <p>Operation of the proposed action would not include any major sources of vibration. As a result, vibration impacts during construction and operation of the proposed action would not be substantial. Operation of the proposed project would result in an increase in traffic volumes on local roadway networks and, consequently, an increase in traffic noise; however, this would not result in a substantial permanent increase in ambient noise levels, and noise impacts from mobile sources would not be substantial. Similarly, the operational noise impacts from stationary sources would not be substantial given that no stationary noise sources proposed would generate noise exceeding 102 dBA.</p>
Public services	<p>As noted in the 2013 EA, the proposed project would not have a substantial impact on public services. Construction and operational activities would not have a substantial impact on fire and emergency services (including response times, site access, and water supplies for fire suppression) or require an expansion of existing services. Development and use would not be expected to generate demand for additional municipal police services that would exceed existing capacity or result in an adverse impact on current service levels or require the expansion of services. The proposed project includes an access road and sidewalk along the northern VA Development Area, allowing limited access to additional open space and the shoreline. Further, the undeveloped portion of the VA Transfer Parcel, including the existing CLT colony, would remain undeveloped. The undeveloped area would add to the cumulative open space within the city of Alameda, an overall benefit.</p>

3.2 Biological Resources

3.2.1 Regulatory Setting

Federal Regulations

For a discussion of federal regulations, refer to Section 3.1.1 (*Biological Resources Regulatory Framework*) of the 2013 EA. Below is a summary of the State regulatory guidance.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA, Fish and Game Code [FGC] Sections 2050 to 2089) establishes various requirements and protections regarding species listed as threatened or endangered under state law. California's Fish and Wildlife Commission is responsible for maintaining lists of threatened and endangered species under CESA. CESA prohibits the "take" of listed and candidate (petitioned to be listed) species (FGC Section 2080). "Take" under California law means to "... hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch capture, or kill ..." (FGC Section 86). The state definition does not include "harm" or "harass," as the federal definition does. As a result, the threshold for take under CESA is typically higher than that under the federal Endangered Species Act.

FGC Section 2081 allows for take incidental to otherwise lawful development projects. A Section 2081 permit is not available to authorize take of fully protected species.

Natural Community Conservation Act

A natural community conservation plan (NCCP) is the state counterpart to the federal habitat conservation plan. It provides a means of complying with the Natural Community Conservation Plan Act (NCCP Act; California FGC Section 2835) and securing CESA take authorization at the state level. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land uses. To be approved by CDFW, an NCCP must provide for the conservation of species and protection and management of natural communities in perpetuity within the area covered by permits.

The NCCP Act requires that conservation actions improve the overall condition of a species and must be applied at the regional scale to promote the long-term recovery of species, protection of habitat and natural communities, and diversity of species at the landscape level.

California Fish and Game Code

The California FGC includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977, fully protected species, and requirements for notification of lake or streambed alteration.

The Native Plant Protection Act of 1977 (FGC Sections 1900 to 1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized under limited circumstances.

FGC Sections 3503, 3513, and 3800 protect raptors and native and migratory birds, including their active or inactive nests and eggs, from all forms of take. In addition, species that are “fully protected” from all forms of take are listed in Section 3511 (birds), Section 5515 (fish), Section 4700 (mammals), and Section 5050 (amphibians). No permit is available to take these species.

CDFW regulates activities that will interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the FGC requires that CDFW be notified of lake or streambed alteration activities. If CDFW subsequently determines that such an activity might adversely affect an existing fish and wildlife resource, the agency has the authority to issue a streambed alteration agreement, including requirements to protect biological resources and water quality.

Section 401 Water Quality Certification

The San Francisco Bay RWQCB is responsible for protecting surface, ground, and coastal waters in its jurisdiction. Section 401 of the Clean Water Act (CWA) requires that federal permits receive water quality certification (Certification) from the State in which a federal permit will be implemented. The San Francisco Bay RWQCB implements the CWA Section 401 Certifications within the San Francisco Bay Region.

San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay RWQCB has regulatory authority over wetlands and waterways under both the federal CWA and the State of California’s Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the Water Board has regulatory authority over actions in waters of the United States, through the issuance of water quality certifications under Section 401 of the CWA, which are issued in conjunction with permits issued by the USACE, under Section 404 of the CWA. When the Water Board issues Section 401 certifications, it simultaneously issues general Waste Discharge Requirements for the project, under the Porter-Cologne Water Quality Control Act. Activities in areas that are outside of the jurisdiction of USACE (e.g., isolated wetlands, vernal pools, seasonal streams, intermittent streams, channels that lack a nexus to navigable waters, or stream banks above the ordinary high water mark) are regulated by the Water Board, under the authority of the Porter-Cologne Water Quality Control Act. Activities that lie outside of USACE jurisdiction may require the issuance of either individual or general waste discharge requirements.

Bay Conservation and Development Commission and San Francisco Bay Plan

The Bay Conservation and Development Commission (BCDC) is authorized by the McAteer Petris Act of 1965 to analyze, plan, and regulate San Francisco Bay and its shoreline. BCDC implements the San Francisco Bay Plan and regulates filling and dredging in the bay, its sloughs and marshes, and certain creeks and their tributaries. BCDC jurisdiction includes the waters of San Francisco Bay as well as a shoreline band that extends inland 100 feet from the high tide line. Any fill, excavation of material, or substantial change in use within BCDC jurisdiction requires a permit from BCDC.

Portions of the project area lie within the jurisdiction of BCDC, as discussed in more detail in Section 4.A, Land Use. BCDC Permit eligibility and conditions of permit issuance are largely governed by the San Francisco Bay Plan, completed and adopted by BCDC in 1968 and amended regularly since then. The San Francisco Bay Plan contains findings and policies related to fish and wildlife, water quality, fill, recreation, public access, and the appearance and design of shorelines, as well as procedures for BCDC control of filling, dredging, and shoreline development. In addition to compliance and coordination with other federal and state regulations and policies discussed in this section, San Francisco Bay Plan policies are also aligned with USACE's Long Term Management Strategy and are focused "to assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased."

3.2.2 Affected Environment

The affected environment for biological resources is as described in the 2013 EA, and no known changes have occurred. A summary of the affected environment as it applies to this SEA is provided below, and the reader is directed to the 2013 EA for a more detailed description. However, given the age of the 2013 EA, biological research was updated to reflect current documentation of sensitive biological resources, as discussed below. As noted in Section 2.2, *Description of Changes to Proposed Project*, of this SEA, the original VA Development Area layout, as analyzed in the 2013 EA, was subsequently revised to reduce impacts on existing wetlands. Given this change in project area, the following assessment includes the new project features' footprints (that is, storm drains and proposed wetland mitigation area), but also includes re-assessment of the Development Area previously evaluated in the 2013 EA.

Habitat Types

The vegetation and wildlife habitat types located in the VA Development Area have been updated to reflect the revised and current layout, as shown in Table 3-2. Descriptions of each habitat type can be found in the 2013 EA.

Table 3-2. Habitat Types in the Project Area (in acres)

Habitat Type	VA Transfer Parcel	2019 VA Development Area ^a	Wetland Mitigation Area
Ruderal-disturbed (vegetated and paved)	353.9	68.0	24.5
Nonnative annual grassland	180.0	32.8	25.6
Northern coastal saltmarsh	24.1	0.2	7.8
Seasonal wetland	31.7	10.6	4.7
Riprap	4.9	0.0	0.0
California least tern colony (ruderal-disturbed)	9.5	0.0	0.0
Unvegetated waters	19.5	0.0	5.9
Total	623.6^b	111.6^b	68.5

Source: VA and Navy 2013

^a Acreages shown here reflect revised project area footprint. Habitat acreages by type that were used to calculate potential impacts in the 2013 EA can be found in the 2013 EA.

^b In the text following this table, these numbers have been rounded to whole numbers as follows:
VA Transfer Parcel = 624 acres; VA Development Area = 112 acres.

Federally Listed and Special-status Species

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their persistence in a given area, or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as CDFW, USFWS, and private organizations such as CNPS. The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this biological review, special-status species are defined as follows:

- Listed, proposed, or candidates for listing under the federal Endangered Species Act (50 CFR 17.11 – listed; 61 Federal Register 7591, February 28, 1996 candidates)
- Listed or proposed for listing under the California Endangered Species Act (FGC 1992 Section 2050 et seq.; 14 California Code of Regulations [CCR] Section 670.1 et seq.)
- Designated as a species of special concern by the CDFW
- Designated as Fully Protected by the CDFW (FGC Sections 3511, 4700, 5050, 5515)
- Species that meet the definition of rare or endangered under California Environmental Quality Act (14 CCR Section 15380) including CNPS List Rank 1b and 2

During preparation of the 2013 EA, the VA and the Navy's biological research included a review of the following data sources: the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, and the United States Fish and

Wildlife Service (USFWS) species list (VA and Navy 2013). However, given the age of the 2013 EA, these sources were re-evaluated by the VA during preparation of this SEA.

During the re-evaluation, the following publicly available databases were queried to develop a list of special-status species and habitats with the potential to occur in the project area:

- USFWS Information for Planning and Consultation System (USFWS 2020)
- USFWS Critical Habitat Portal (USFWS 2019b)
- National Marine Fisheries Service (NMFS), West Coast Region, California Species List Tools (2018)
- California Department of Fish and Wildlife (CDFW) CNDDDB QuickView Tool in BIOS 5 (CDFW 2019)
- CNPS's Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2019)

The USFWS Information for Planning and Consultation System was queried to identify federally listed species that have the potential to occur in the project vicinity. In addition, the USFWS Critical Habitat Portal was queried to identify designated critical habitat in or adjacent to the proposed project. No critical habitat was identified. The NMFS California Species List Tool was queried to identify federally listed fish that have the potential to occur in the Oakland West United States Geological Survey (USGS) 7.5-minute quadrangle. A query of the CNDDDB database provided a list of processed and unprocessed occurrences for special-status species in the San Quentin, Richmond, Brione's Valley, San Francisco North, Oakland West, Oakland East, San Francisco South, Hunters Point, and San Leandro USGS 7.5-minute quadrangles. Lastly, the CNPS database was queried to identify special-status plant species with the potential to occur in the aforementioned quadrangles. Raw data from the database queries are provided in Appendix C, *Biological Resources Supporting Information*.

The USFWS, CNDDDB, and CNPS database queries identified several special-status species with the potential to be affected by the proposed project. The table provided in Appendix C summarizes all species identified in the search results, describes the habitat requirements for each species, and offers conclusions regarding the potential for each species to be affected by the proposed project.

Plants

The database queries identified 17 federally listed plant species with the potential to occur in the vicinity of the proposed project. The results of the queries are included in the species list in Appendix C. All of the federally listed plant species returned during the queries are presumed absent from the project area due to a lack of suitable habitat and are not evaluated further.

The database queries identified another 79 special-status plants with the potential to occur in the vicinity of the proposed project. Suitable habitat for 7 special-status plant species occurs in the project area. Although previous botanical surveys were conducted in 2013 and no special-status species were identified, enough time has passed that the

findings would not be considered valid. Thus, it is assumed there is potential for these 7 species to occur in the project area, specifically in the wetland areas.

Wildlife

The database queries identified 21 federally listed wildlife species with the potential to occur in the vicinity of the proposed project, including 9 marine species and 12 terrestrial species. The results of the queries are included in the species list in Appendix C. The following federally listed species are known to occur, or were determined to have the potential to occur, in the project area due to the presence of suitable habitat: green sturgeon (*Acipenser medirostris*), steelhead (*Oncorhynchus mykiss irideus*), longfin smelt (*Spirinchus thaleichthys*), western snowy plover (*Charadrius alexandrinus nivosus*), and California least tern (*Sternula antillarum browni*).

The database queries identified another 51 special-status animal species with the potential to occur in the vicinity of the proposed project. Most of these species were ruled out from occurring in the project area due to a lack of habitat; however, suitable habitat for 14 of the species does occur in the project area. Refer to the table in Appendix C for a list of species determined to have the potential to occur in the project area based on the presence of suitable habitat.

Waters of the United States and Waters of the State, Including Wetlands

A USACE delineation of aquatic resources was conducted for the VA Transfer Parcel to identify potential waters of the United States, including wetlands (AECOM 2012). Potentially jurisdictional wetlands and other waters of the United States include the unvegetated waters of the Runway Wetland and the West Wetland. Salt marsh is present in the Runway Wetland, the Main Runway Area, and areas along the western side of the site. Seasonal wetlands are present in the grassland areas between the runways and roads of the former airfield in the Main Runway Area and along the western side of the site. Figure 2-6 illustrates the aquatic resources in the VA Transfer Area.

A total of 11.7 acres of USACE jurisdictional aquatic resources were documented in the 2019 VA Development Area, and a total of 18.6 acres of potentially jurisdictional features were documented at the wetland mitigation site. Table 3-3 provides a summary of aquatic resource acreages associated with the VA Transfer Parcel, revised 2019 VA Development Area, and the tidal marsh mitigation site (creation and enhancement areas).

Table 3-3. Summary of Jurisdictional Aquatic Resources (in acres)

Feature Description	VA Transfer Parcel	2019 VA Development Area	Tidal Marsh Mitigation Area
Traditional navigable waters	19.5	0.3	6.1
Unvegetated waters – West Wetland	9.4	0.0	0.0
Unvegetated waters – Runway Wetland	5.9	0.0	5.9
San Francisco Bay water	4.2	0.3	0.2
Wetlands abutting or adjacent to a traditional navigable water	55.8	11.4	12.5
Northern coastal salt marsh	24.1	0.2	7.8
Seasonal wetland	31.7	11.2	4.7
Total potentially jurisdictional features	75.3	11.7	18.6

Source: AECOM 2012

Migratory Corridors

The project area is characterized predominantly by developed and disturbed land that is located on human-made fill, with wetland and saltmarsh habitat occurring in isolated patches throughout. Because of the nature of existing land use and development, migration through the project area is generally limited to bird species.

3.2.3 Environmental Consequences

This analysis is based on the 2013 EA; however, given the age of the 2013 EA and the subsequent revisions to the layout, impacts on species and aquatic resources have been reassessed, as described below. The environmental consequences assessed below focus on species and aquatic resources. Local policies and plans that focus on these resources and may apply to this proposed were reviewed as part of the analysis. It was determined that the proposed project would not conflict with any local policies or plans.

Federally Listed and Special-status Species

Plants

As previously noted, the VA Transfer Parcel does not contain any designated or proposed critical habitat or federally listed plant species. Therefore, the proposed project would have no construction-related impact on federally listed or designated or proposed plant species and habitat. However, suitable habitat for 7 special-status plant species occurs in the northern coastal salt marsh and seasonal wetlands habitats overlapping with the proposed stormwater management system improvements and tidal marsh mitigation area. Project-related activities in northern coastal salt marsh and seasonal wetlands habitats could cause adverse impacts on these species if they are present in areas proposed for disturbance. To minimize impacts on special-status plant species, mitigation measures (MMs) MM BIO-1, MM BIO-2, and MM BIO-3 are proposed.

MM BIO-1: SPECIAL-STATUS PLANT ASSESSMENT AND SURVEYS

A qualified botanist will be retained to evaluate the suitability of habitats in the project area for the occurrence of special-status plants. If the botanist deems the habitats suitable, focused surveys will be conducted to determine the presence or absence of special-status plant species with potential to occur in and adjacent to (within 100 feet, where appropriate) the proposed impact area. These surveys will be conducted in accordance with CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). These guidelines require that rare plant surveys be conducted at the proper time of year when rare or endangered species are both evident and identifiable. Field surveys will be scheduled to coincide with known flowering periods and/or during appropriate developmental periods that are necessary to identify the plant species of concern.

MM BIO-2: BIOLOGICAL MONITORING AND WORKER ENVIRONMENTAL AWARENESS PROGRAM

A qualified biologist(s) will monitor construction activities that could cause significant impacts to sensitive biological resources. In addition, a qualified biologist will be retained to conduct mandatory contractor and worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the identified location(s) of sensitive biological resources, including how to identify (through visual and auditory means) the species that are most likely to be present, the need to avoid impacts on biological resources (for example, plants, wildlife, and jurisdictional waters), and to brief them on the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor will ensure that they receive the mandatory training before starting work.

MM BIO-3: SPECIAL-STATUS PLANT AVOIDANCE

If any state listed, federally listed, and/or CNPS List 1 or CNPS List 2 plant species are found in the proposed impact areas, or within 100 feet of proposed impact areas, during the surveys, these plant species will be avoided to the greatest extent possible, and the following will be implemented:

- Any special-status plant species that are identified in or adjacent to the project sites, but not proposed to be disturbed, shall be protected by flagging, signage, orange construction fence, and/or silt fence as appropriate based on site conditions to limit the effects of project-related activities and material stockpiles on any special-status plant species.
- If project-related activities would result in the loss of greater than 10% of a population or occupied habitat for a special-status plant species, a mitigation plan would be developed that describes a program to transplant, salvage, cultivate, and re-establish the species at suitable sites (if feasible). Alternatively, mitigation could be satisfied through off-site preservation or via payment to an in-lieu fee program, if available.

If the mitigation plan is chosen, it would include means and methods to propagate affected special-status plants via vegetative or reproductive means (for example, harvesting of seed or seed bank through topsoil collection, salvaging and transplanting or collecting of cuttings), as appropriate for the species, and transplant at suitable receiving sites as close to the existing population as possible. Propagation

and transplantation would occur prior to construction. The receiving location would be evaluated and chosen based on similarity to conditions at the transplant source location, to the extent feasible. Site conditions to consider when choosing a receiving site would include aspect, substrate, hydrology, associated species, and canopy cover. The transplanted plants would be monitored for at least one year following construction.

If the preservation option is chosen, preservation areas may include undisturbed areas of the site that will be preserved and managed in perpetuity, offsite mitigation lands, or a combination of both. The preserved habitat shall be of equal or greater habitat value to the areas affected in terms of soil features, extent of disturbance, vegetation structure, and contain extant populations of the same or greater size as the area affected.

The actual level of mitigation may vary depending on the sensitivity of the species, its prevalence in the area, the location of the occurrence, and the current state of knowledge about overall population trends and threats to its survival; however, at a minimum, the species and habitat will be replaced at a minimum 1:1 ratio (individuals or acreage of occupied habitat).

Fishes

The proposed project would install three new storm drain culverts at two new outfall locations, which would discharge into the Oakland Inner Harbor, and replace the associated headwall sections. The two new outfalls would consist of one headwall with one 36-inch pipe and one 24-inch pipe, and one headwall with one 36-inch pipe (see Figures 2-8 and 2-9). Both 36-inch pipes would be used for stormwater management on the proposed project, while the 24-inch pipe would be installed and capped for future use by the City of Alameda. Installing the new outfalls would have permanent and temporary impacts on special-status fish habitat in the adjacent marine environment/unvegetated waters, including on federally listed green sturgeon, steelhead, and longfin smelt, as well as California species of special concern, white sturgeon (*Acipenser transmontanus*). Additionally, a breach in the seawall for the wetland creation area, which is currently being negotiated with USACE and the San Francisco Bay Regional Water Quality Control Board, would require installing a temporary coffer dam and would cause temporary impacts on special-status fish if they are present in the proposed dewatering area. Deep dynamic compaction activities that could occur during construction of the OPC and other proposed facilities would have no effect on fishes, as the activities would be occurring away from the shoreline. Fish utilize the Bay and harbor for movement; however, in-water work associated with the proposed project would not impede movement.

Project-related activities in and adjacent to unvegetated waters and the San Francisco Bay could cause adverse impacts on federally listed and special-status fishes if they are present in areas proposed for disturbance. To minimize adverse impacts on these species, MM BIO-4 is proposed in addition to aforementioned MM BIO-2. Implementation of these mitigation measures, or measures included in agency permits, will minimize adverse effects on federally listed and special-status fish.

MM BIO-4: SPECIAL-STATUS FISH AVOIDANCE

The following will be implemented to avoid impacts on special-status fish species that could be affected by the proposed project.

1. Heavy equipment will be restricted to the land.
2. Appropriate netting in construction areas within 50 feet of the shoreline will be used to contain debris during construction.
3. Work in San Francisco Bay and/or the Oakland Inner Harbor will be restricted to between June 15 and November 30, which is the National Marine Fisheries Service approved work window.
4. Cofferdams around the construction areas will be installed at low tide to minimize impacts to special-status fish.
5. All construction material, wastes, debris, sediment, trash, fencing, etc. will be removed from the site on a regular basis during work and at project completion, and materials will be transported to an authorized disposal area.
6. A qualified fisheries biologist would design and implement a Fish Rescue and Salvage Plan to collect fish and other aquatic species, as needed, from the in-water work isolation areas. The Plan would be submitted to the National Marine Fisheries Service for review and approval at least 30 days prior to initiation of in-water work activities. In addition, a fisheries biologist would provide observation during initial dewatering activities in the cofferdam(s).

Wildlife

CALIFORNIA LEAST TERN AND WESTERN SNOWY PLOVER

The project area provides nesting and/or foraging habitat for federally listed endangered California least tern and threatened western snowy plover. On August 29, 2012, a biological opinion (BO) was issued by USFWS for the proposed project. This BO analyzed the effects of the construction and operation of the proposed project on California least tern and western snowy plover. Since the BO was issued, the three additional project components have been added.

The proposed improvements to the stormwater management system would occur about 2,100 feet north-northwest of the California least tern colony and would not cause any measurable effect on California least terns, because this action would not cause a long-term increase in human presence in the area, and no new aboveground infrastructure would be installed that would amplify predation pressure. The small amount of in-water work that would be necessary to complete the improvements in the Oakland Inner Harbor would not cause any net loss of foraging habitat for California least terns. Predation pressure, human disturbance, loss of foraging habitat, and construction-related effects would be mitigated through implementing all relevant avoidance and minimization measures and the terms and conditions of the 2012 BO. All deep dynamic compaction activities would occur outside of nesting season.

The tidal marsh mitigation area would be about 1,100 feet south-southeast of the California least tern colony. The proposed construction and long-term management activities would occur outside the nesting season to avoid adverse effects from human-

related disturbances and construction-related effects on nesting California least terns, and no lighting or other aboveground infrastructure is proposed. Furthermore, all work would be completed in accordance with all appropriate avoidance and minimization measures and terms and conditions of the BO, including managing vegetation to a height of 4 feet or less. A long-term monitoring and management plan has been drafted for the tidal marsh mitigation area. This document will be submitted to USACE, RWQCB, and USFWS for review and approval prior to implementation. The level of effect on California least terns would not increase from what was previously determined during the consultation resulting in the BO (see Appendix C).

The BO came to the determination that the proposed project was not likely to adversely affect the snowy plover for the following reasons: the snowy plover is rarely sighted in the action area, a single individual is only sighted once every few years, and no nesting has been documented at the site for more than 20 years. Since the issuance of the BO, snowy plover use of the project area has not changed; therefore, the proposed changes to the VA Project are not anticipated to result in any increased adverse effects on this species.

Project-related activities could cause adverse impacts on California least tern. To minimize adverse impacts on California least tern, MM BIO-5 and MM BIO-6 are proposed in addition to aforementioned MM BIO-2. Implementation of these mitigation measures, or measures included in agency permits, will minimize adverse effects on California least tern.

MM BIO-5: California Least Tern Avoidance

During the California least tern breeding season (April 1 to August 15), the biological monitor will be present during all construction activities. The monitor will:

- Inspect the work area for proper disposal of garbage into covered containers.
- Inspect the work area and adjacent habitat areas to determine whether California least terns are present before the start of work each day within areas of suitable least tern habitat.
- Inspect the integrity of temporary construction barriers to determine whether repairs are needed and coordinate repairs, as necessary. The biological monitor may make field adjustments to the location of temporary construction barrier fences, as needed. The contractor will remove the fences after construction activities are completed.
- Have the authority to immediately stop work if a California least tern is observed in the construction area.

MM BIO-6: Predator Management Plan Update

Per the 2012 USFWS BO, a predator management plan was drafted and implemented across the VA property. This plan will be reviewed and updated, as necessary, to include the new project area at the wetlands creation site. As part of this management plan, within 600 feet of the VA Transfer Parcel, the tops of all buildings will be inspected for avian predator nests once each week by a qualified USFWS-approved predator management biologist during the period from March 25 through August 7. Any avian predator nests on the buildings or in the Regional Park shall be monitored to determine if

nest removal is required to reduce predation pressure at the least tern colony site. If USFWS personnel are not contracted for these activities, then the qualifications of other proposed personnel shall be reviewed and be subject to final approval by the USFWS.

OTHER SPECIAL-STATUS BIRDS, AND MIGRATORY BIRDS AND RAPTORS

The project area provides nesting and/or foraging habitat for several special-status species including the grasshopper sparrow (*Ammodramus savannarum*), short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), loggerhead shrike (*Lanius ludovicianus*), California black rail (*Laterallus jamaicensis columiculus*), Alameda song sparrow (*Melospiza melodia pusillula*), San Pablo song sparrow (*Melospiza melodia samuelis*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), California brown pelican (*Pelecanus occidentalis californicus*), and black skimmer (*Rynchops niger*), and yellow warbler (*Setophaga petechial*). In addition, the project area provides nesting and/or foraging habitat for other migratory birds and raptors not identified in the table provided in Appendix C.

As noted above, the 2012 USFWS BO included measures to develop and implement a predator management plan, which includes raptor control. One component of this measure is conducting weekly inspections for raptor nests during the breeding season. Any avian predator nests are to be monitored to determine if nest removal is required to reduce predation pressure at the California least tern colony site. This measure minimizes the potential for raptors to nest on the project area; however, if raptor nests become established, buffers would be established until the nest is inactive.

All native breeding birds (except game birds during the hunting season), regardless of their listing status, are protected under the Migratory Bird Treaty Act. Vegetation clearing during the nesting season could cause direct impacts on nesting birds if they are present in construction areas. Furthermore, noise and other human activity may cause birds to abandon their nests if nesting birds are present within 200 feet (500 feet for raptors) of a construction area. MM BIO-2 and MM BIO-7 though MM BIO-9 are recommended to minimize effects on California least tern, special-status birds and migratory birds and raptors.

MM BIO-7: Migratory Bird and Raptor Surveys and Avoidance

If clearing and/or construction activities would occur during the migratory bird nesting season (January 1 to August 31), preconstruction surveys to identify active migratory bird and/or raptor nests will be conducted by a qualified biologist within 14 days of the start of construction. Focused surveys will be performed by a qualified biologist to determine the presence or absence of active nest sites in the proposed impact area, including construction access routes and a 500-foot buffer, where feasible.

If active nest sites are identified in the survey areas, a no-disturbance buffer will be established for all active nest sites before the start of any project construction activities to avoid construction or access-related disturbances to migratory bird nesting activities. A no-disturbance buffer constitutes a zone in which project-related activities (that is, vegetation removal, earth moving, and construction) cannot occur. The size of no-disturbance buffers will be determined by a qualified biologist based on the species, the activities proposed in the vicinity of the nest, and topographic and other visual barriers.

MM BIO-8: California Black Rail Seasonal Avoidance or Protocol-level Surveys

To avoid causing the abandonment of an active black rail nest, activities in or adjacent to tidal marsh areas shall be avoided during the rail breeding season from February 1 through August 31 unless protocol-level surveys are conducted by a qualified biologist (for black rails) to determine rail locations and territories. If breeding rails are determined to be present, construction activities shall not occur within 700 feet of an identified calling center (nesting area). If the intervening distance across a substantial barrier between the rail calling center and any construction activity area is greater than 200 feet, then construction activity may proceed at that location during the breeding season.

MM BIO-9: Burrowing Owl Avoidance

If no burrowing owls are detected, no further mitigation is required. If burrowing owls are detected, the avoidance, minimization, and mitigation methodologies outlined in the CDFW's (2012) *Staff Report on Burrowing Owl Mitigation* shall be implemented prior to initiating project-related activities that may impact burrowing owls.

SALT MARSH WANDERING SHREW

Focused surveys for salt marsh wandering shrews (*Sorex vagrans halicoetes*) have not been conducted to date in the project area; however, northern coastal salt marsh habitats overlapping with the proposed stormwater management system improvements and tidal marsh mitigation area provide suitable habitat for this species. As a result, project-related activities could cause adverse impacts on salt marsh wandering shrews if they are present in areas proposed for disturbance. MM BIO-10 is recommended to minimize effects on this species.

MM BIO-10: Salt Marsh Wandering Shrew Surveys and Avoidance

To minimize or avoid the loss of individual salt marsh wandering shrews as a result of project-related activities, the following will be implemented:

- Vegetation removal in tidal salt marsh habitat will be limited to the minimum amount necessary.
- Sufficient pickleweed and/or marsh habitat, as determined by the biological monitor, will remain adjacent to the activity area to provide refuge for displaced shrews.
- As determined by the biological monitor, silt fences will be installed at the limits of construction areas, where necessary, to define and isolate potential shrew habitat.
- Vegetation removal in tidal salt marsh habitat will start at the edge farthest from the marsh (landward) and will progress into the marsh. This method provides cover for the shrew and allows individuals to move toward the marsh as vegetation is being removed.

Waters of the United States and Waters of the State, Including Wetlands

Constructing the proposed facilities in the 112-acre VA Development Area would permanently fill a total of 10.85 acres of wetlands over the proposed 120-year (or more) decadal-phased construction period (see Figure 2-5 in Section 2.2, *Description of Changes to Proposed Project*). Phase 1 is scheduled to begin in 2021 and would fill

about 3.6 acres of potentially jurisdictional waters of the United States/state. The remaining 7.25 acres of wetland impacts would occur as future phases of columbaria construction are required based on the interment needs of Veterans.

Impacts from Phase 1 would be compensated for through the purchase of 3.6 acres of wetland mitigation credits at the USACE and San Francisco Bay Regional Water Quality Control Board–approved San Francisco Wetland Mitigation Bank. Future decadal phases of cemetery construction would be compensated for by early creation of 8 acres of wetlands at the on-site location to ensure that the outcome is at least 7.25 acres of functional tidal wetlands. In addition, the on-site mitigation strategy includes constructing a transition zone adjacent to the proposed tidal marsh creation area and enhancing existing tidal marsh and salina habitat east of the area proposed for the new tidal wetlands.

The wetland mitigation enhancement activities would cause minor, temporary impacts to up to 1.34 acres of existing jurisdictional wetlands in the wetland mitigation area as a result of a combination of invasive plant control (1.25 acres) and associated vehicle access for invasive plant control work (0.09 acre); more information is provided in the next paragraph. These temporary impacts would be restored in place during the same year as construction.

Additionally, the tidal marsh creation activities would require installing a temporary cofferdam to dewater the seawall in order to install the tidal inlet. This would cause temporary impacts to 0.16 acre of shallow estuarine open waters directly adjacent to the seawall in San Francisco Bay. The cofferdam would be removed following construction of the inlet.

As described, all permanent and temporary effects on waters and wetlands in the project area would be compensated for through a combination of mitigation credits, on-site enhancement, and restoration. This would cause no net loss of waters of the United States and waters of the state.

Impact Summary

Table 3-4 summarizes the impacts to biological resources.

Table 3-4. Summary of Impacts to Biological Resources

Resource Area	Threshold Description	Level of Impact under NEPA
Biological resources	Would the project result in adverse impacts to federally listed and special-status plant species?	No significant construction-related impact with implementation of mitigation No significant operational impact
	Would the project result in adverse impacts to federally listed or special status fishes?	No significant construction-related impact with implementation of mitigation No significant operational impact

Resource Area	Threshold Description	Level of Impact under NEPA
	Would the project result in adverse impacts to California least tern?	No significant construction-related impact with implementation of mitigation No significant operational impact with implementation of mitigation
	Would the project result in adverse impacts to western snowy plover?	No significant construction-related impact No significant operational impact
	Would the project result in adverse impacts to salt marsh wandering shrews?	No significant construction-related impact with implementation of mitigation No significant operational impact
	Would the project result in adverse impacts to waters of the United States, including wetlands and waters of the state?	No significant construction-related impact No significant operational impact

3.3 Water Quality and Coastal Consistency

3.3.1 Regulatory Setting

Federal Regulations

This section includes a description of the Rivers and Harbors Act Section 10, which was not included in the 2013 EA but applies to the project's regulatory setting due to the addition of the proposed storm drains and wetlands creation area. For a discussion of other relevant regulations refer to Section 3.2.1 (*Water Resources Regulatory Framework*) and Section 3.11.1 (*Utilities Regulatory Framework*) of the 2013 EA.

Rivers and Harbors Act Section 10 (33 United States Code 401 et seq.)

Section 10 of the Rivers and Harbors Act requires authorization from USACE for the construction of any structure in or over any navigable water of the United States; the excavation, dredging, or deposition of material in these waters, or any obstruction or alteration in a "navigable water." Structures or work outside the limits defined for navigable waters of the United States requires a Section 10 permit if the structures or work would affect the course, location, condition, or capacity of the water body.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act allows the State Water Resources Control Board (Water Board) to adopt statewide water quality control plans or basin plans. The purpose of the plans is to establish water quality objectives for specific water bodies. The San Francisco Bay RWQCB has prepared the San Francisco Bay Basin Plan that establishes water quality objectives and implementation programs to meet the stated objectives and to protect the beneficial uses of the bay waters (see regional regulatory discussion below). The act also authorizes the National Pollutant Discharge Elimination System (NPDES) program under the CWA, which establishes effluent limitations and water quality requirements for discharges to waters of the state. Most of the implementation of the Water Board's responsibilities is delegated to the nine regional boards. Under the NPDES program, the San Francisco Bay RWQCB has established permit requirements for stormwater runoff for the project site vicinity (see regional discussion below).

San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay RWQCB has regulatory authority over wetlands and waterways under both the federal CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the Water Board has regulatory authority over actions in waters of the United States, through the issuance of water quality certifications under Section 401 of the CWA, which are issued in conjunction with permits issued by the USACE, under Section 404 of the CWA. When the Water Board issues Section 401 certifications, it simultaneously issues general Waste Discharge Requirements for the project, under the Porter-Cologne Water Quality Control Act. Activities in areas that are outside of the jurisdiction of USACE (e.g., isolated wetlands, vernal pools, seasonal streams, intermittent streams, channels that lack a nexus to navigable waters, or stream banks above the ordinary high water mark) are regulated by the Water Board, under the authority of the Porter-Cologne Water Quality Control Act. Activities that lie outside of USACE jurisdiction may require the issuance of either individual or general waste discharge requirements.

3.3.2 Affected Environment

The affected environment for water quality and coastal consistency is as described in Section 3.2 (*Water Resources*) of the 2013 EA, and no known changes have occurred. A summary of the affected environment, as it applies to this SEA, is provided below.

Hydrologic Features

The topography of the VA Transfer Parcel is generally flat. The San Francisco Bay shoreline breakwater, which is lined in riprap, borders the VA Transfer Parcel along its western and southern boundaries. The parcel is mostly covered by runway surfaces from the former NAS Alameda, and no other creeks, natural watercourses, or wild and scenic rivers cross the parcel.

Jurisdictional wetlands are present in the project area as described in Section 3.2, *Biological Resources*. Periodic flooding from intense rain events is common on the VA

Transfer Parcel, and the runoff is partially collected in an existing stormwater drainage system; however, given the current condition of the existing drainage system, much of this water stays onsite and has created seasonal wetlands in areas between paved runway sections. The existing stormwater drainage system conveys some of the runoff from rain events from the VA Transfer Parcel directly to surrounding receiving waters. More information about the stormwater drainage system is provided in the following section and in Section 3.11 (*Utilities*) of the 2013 EA.

Stormwater Management Systems

This section summarizes the affected environment for existing stormwater drainage systems as it applies to this SEA. The reader is directed to Appendix A of the 2013 EA for discussions of the affected environment and environmental consequences for all other evaluated utilities.

As introduced in the previous section, surface water runoff from the VA Development Area is partially collected in the existing stormwater drainage system, which was constructed in the early 1940s to convey surface water runoff from the Naval base directly to receiving waters. The existing storm drainage collection system consists of drains, catch basins, and 11 discharge outfalls. As described in Section 2.2, *Description of Changes to Proposed Action*, an assessment of the existing storm drainage features in the VA Development Area and vicinity showed that, because of their age, many of the drains are not in usable condition and are generally degraded or failed. A copy of the evaluation of the existing storm drain system is included in Appendix B, *Storm Drain Study*.

The existing storm drainage collection system is currently operated and maintained by the City of Alameda. The deterioration of the existing storm drains and the generally flat topography prevent runoff from being conveyed efficiently, and so seasonal ponding of runoff from rain events is common in the VA Development Area.

Groundwater Water Quality

The VA Transfer Parcel is located in the East Bay Plain Subbasin in the Santa Clara Valley Groundwater Basin (California Department of Water Resources [DWR] 2004). Depth to groundwater is between approximately 1 foot and 4.5 feet below ground surface.

The greater Alameda Point area is also located in the East Bay Plain Subbasin in the Santa Clara Valley Groundwater Basin (DWR 2004). Although groundwater has been encountered close to the ground surface, this shallow water-bearing zone is not considered part of a regionally extensive aquifer. Most of the shallow groundwater wells were closed by 1900 due to overpumping resulting in saltwater intrusion. According to the San Francisco Bay RWQCB Basin Plan, there are no beneficial uses for this water, and the groundwater is not considered a potential drinking water source because of its poor quality (Battelle 2010). Sole-source aquifers, or aquifers that supply at least 50 percent of the drinking water consumed in the area overlying the aquifer, are not located underneath the Alameda Point area (United States Environmental Protection Agency [USEPA] 2018a).

CONTAMINANT MANAGEMENT PLAN

The project area is known to have contaminated soil and groundwater that are undergoing remedial action under the supervision of USEPA, the San Francisco Bay RWQCB, and DTSC. As part of the proposed project, a contaminant management plan was prepared to identify areas within, or bordering the Project, that contain contaminants that could present limitations on reuse or disposal, present a health risk to construction workers, or reduce the effectiveness of institutional controls (ICs). The contaminant management plan also presents protocols to characterize, manage, and dispose of contaminated soil and groundwater and identifies procedures to be followed in the event that previously undiscovered waste is encountered. Protocols outlined in the contaminant management plan would apply to the new project features construction footprints (that is, the areas corresponding to construction of new storm drains and proposed wetlands creation and enhancement site), as well as the main facilities project area.

Surface Water Quality

Stormwater runoff from the VA Transfer Parcel and the area south of the VA Transfer Parcel discharge into the Oakland Inner Harbor and the lower San Francisco Bay. Rainwater runoff from pervious and impervious surfaces is the only current source of discharge to receiving waters from the VA Transfer Parcel. The existing stormwater drainage system within the greater former NAS Alameda property historically conveyed stormwater runoff from industrial activities; however, no industrial activities are currently conducted on the property because these Navy operations have ceased.

Stormwater discharges from the project elements would be discharged to the Oakland Inner Harbor, an estuary. The Water Board designates the beneficial uses of surface water bodies to achieve, protect, and provide benefits to the people of the state. Beneficial uses define the resources, services, and quality of surface waters and serve as the basis of associated water quality standards. The beneficial uses designated for the Oakland Inner Harbor are listed in Table 3-5.

Table 3-5. Beneficial Uses Designated for the Oakland Inner Harbor

Beneficial Use Designation	Description
Estuarine habitat (EST)	Uses of water that support estuarine ecosystems, including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (for example, estuarine mammals, waterfowl, and shorebirds), and the propagation, sustenance, and migration of estuarine organisms.
Wildlife habitat (WILD)	Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.
Water contact recreation (REC1)	Uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and uses of natural hot springs.

Beneficial Use Designation	Description
Noncontact water recreation (REC2)	Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where water ingestion is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Navigation (NAV)	Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Source: Water Board (2017)

Beneficial uses are protected through establishing and enforcing water quality objectives, both numerical and narrative. Numerical objectives refer to specific pollutant concentrations that are applied to each class of water to protect its beneficial uses. Narrative objectives are general descriptions of water quality that must be attained through pollutant-control measures and watershed management.

A water body that meets the water quality numerical objectives for its beneficial uses and meets the narrative objectives is classified as “supporting” its beneficial uses. A water body that supports some but not all of its numerical objectives is classified as “partially supporting” its beneficial uses. A water body that does not meet the water quality numerical objective is classified as “impaired.”

If the surface water quality of a water body exceeds the quality thresholds established by the Water Board for the water body’s beneficial uses, the surface water is listed in the *California Integrated Report*, commonly referred to as the 303(d) list [after Section 303(d) of the Clean Water Act (CWA)], as impaired waters. The State must then develop a total maximum daily load (TMDL) for each 303(d) constituent to address pollutant sources and take measures to restore the water body’s beneficial uses. A TMDL identifies the maximum daily amount of a pollutant that a water body can receive while still meeting its water quality standards.

The Oakland Inner Harbor is on the State’s 303(d) list for multiple pollutants due to discharges from air deposition; historic industrial activities; and existing municipal, agricultural, and industrial sources, including urban stormwater runoff, and the Water Board has developed TMDLs. TMDLs account for sources and contributions of pollutants that cause the water to be listed on the 303(d) list and identify implementation strategies to restore the water body’s beneficial use. The Water Board develops Basin Plans (water quality control plans) to implement TMDL requirements through NPDES permits, which must be consistent with any approved TMDL.

The State of California administers the NPDES rules, as delegated, through the Water Board. Under this program, industries and municipalities that could discharge wastewater, stormwater, or other pollutants into water bodies must obtain an NPDES permit. The City has a Municipal Separate Sewer System (MS4) NPDES Permit under which its stormwater discharges to receiving waters are managed. The two proposed storm drain outlets proposed as part of the proposed project would be on City property and post-construction maintenance would be the responsibility of the City. Therefore, the

new storm drains are being designed in coordination with the City to confirm that the facilities meet the requirements of the City's MS4 NPDES Permit.

Coastal Consistency

The Coastal Zone Management Act (CZMA) (16 United States Code [USC] Section 3501 et seq., as amended in 1990 under the Coastal Zone Act Reauthorization Amendments) is administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management. The CZMA provides for management of the nation's coastal resources while also balancing economic development with environmental conservation. The purpose of the CZMA is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone" (National Oceanic and Atmospheric Administration Office for Coastal Management 2019).

The San Francisco Bay BCDC, established in 1965, is a California state planning and regulatory agency that has regional authority over San Francisco Bay, the Bay's shoreline band, and the Suisan Marsh. The purpose of BCDC is to protect and enhance the San Francisco Bay and to encourage responsible and productive uses of the Bay for current and future generations. BCDC is given authority under the McAteer-Petris Act (Government Code Sections 66600 to 66684) and the Suisun Marsh Preservation Act (Public Resources Code [PRC] Sections 29000 to 29612). In addition to its permit authority under state law, BCDC has authority under Section 307 of the federal CZMA (16 USC Section 1456) over federal activities and development projects and non-federal projects that require a federal permit or license, or are supported by federal funding (BCDC 2015).

The proposed storm drain outfalls and the wetland mitigation area are located in the coastal zone regulated by the CZMA. As a result, activities associated with these new project features now included in the proposed project must be implemented consistent with the San Francisco Bay Plan and related policies to the maximum extent practicable. The project received a Consistency Determination from BCDC in 2014, and the VA is currently coordinating with BCDC for an updated Consistency Determination that would include all project features, including the storm drains and wetland mitigation area.

3.3.3 Environmental Consequences

The proposed project as described in the 2013 EA has changed because of the proposed improvements and upgrades to the existing storm drain infrastructure, including the construction of two new 36-inch-diameter drainage pipes and outfalls, installation of a 24-inch diameter pipe to be capped for future City use, cleaning and jetting of two existing drainage pipes and outfalls, as well as the addition of proposed onsite wetlands mitigation.

New and improved stormwater infrastructure would be appropriately sized to accommodate the proposed project. The new stormwater facilities would be used to convey runoff from the proposed facilities into the Oakland Inner Harbor. Easements would be obtained from the City to construct the storm drains across the City land between the proposed VA Development Area and the discharge outfalls into the estuary. The VA would be responsible for maintenance of the easements; ownership would not

be transferred to the City. Bioswales and retention ponds, included as part of the proposed project, would be constructed adjacent to proposed roads and parking areas to reduce sediment runoff from stormwater at new and existing impervious areas, and would also provide water quality treatment for runoff in compliance with City MS4 permit and approvals.

For the new storm drains, maintenance would be performed by the City to remove sediment from bioswales, retention ponds, and outfalls to maintain the hydraulic capacity of the stormwater conveyances and treatment features. Additional water quality treatment at the south side of the VA Development Area would be provided by the proposed on-site tidal marsh wetland mitigation features as they will replace previously impervious surfaces (that is, runway sections) with a vegetated pervious surface.

Groundwater Water Quality

The proposed wetlands mitigation site would not require the use or affect the quality of groundwater resources. Construction of the two new outfalls would require dewatering in the construction area and installation of two temporary cofferdams. Dewatering would result in temporary impacts to groundwater. However, dewatering would be done in conformance with the site groundwater management plan and NPDES dewatering permit conditions, and site conditions would be restored once construction activities are complete. As a result, impacts to groundwater quality would not be substantial.

The proposed project elements would not reduce groundwater recharge because no new impervious areas would be added. Some of the project elements could increase the amount of groundwater discharge, specifically the stormwater management areas (bioswales and retention area) and proposed wetland mitigation.

Surface Water Quality

None of the new project elements would add impervious surfaces. The new storm drains would be constructed underground, and the surface area disturbed by the construction would be returned to preconstruction conditions. Therefore, there would be no increase in stormwater runoff or change in the stormwater water quality that is discharged to the receiving waters. Finally, the removal of impervious area to create the wetland mitigation site would reduce the amount of stormwater runoff discharged to receiving waters.

In advance of implementing the proposed project, the VA or assigned contractor would be required to obtain a NPDES Permit for stormwater discharges that could result from construction activities. Construction activities associated with the proposed project would include site grading and earth-disturbing activities that could cause erosion and/or siltation. Erosion of on-site soils can lead to increased levels of suspended sediments and turbidity to be discharged from the site into receiving waters and could reduce water quality and cause a violation of water quality standards.

To minimize the potential for adverse effects on water quality in the Harbor as a result of the proposed action, all appropriate BMPs and terms and conditions outlined in the San Francisco Bay RWQCB CWA Section 401 Water Quality Certification would be implemented. Additionally, in accordance with the CWA Section 402 and NPDES regulations, to minimize the temporary effects of stormwater discharges during construction activities on receiving water quality, the State requires project proponents to

obtain a NPDES Construction General Permit. To obtain coverage under the General Permit, a SWPPP is required to be prepared and retained on site during construction. The SWPPP would identify BMPs to be constructed and maintained to reduce impacts to receiving waters from erosion and sedimentation during construction activities.

The SWPPP includes structural and nonstructural controls such as protecting existing storm drain and catch basin inlets, establishing perimeter controls, covering construction materials and mounds, maintaining washout areas or wet construction materials, and performing inspections and regular maintenance. To construct the new outfall structures, a construction work area would need to be temporarily dewatered in the Harbor. Dewatering would be accomplished through the implementation of cofferdams. All cofferdam construction would occur at low tide and containment would be used to contain debris and minimize the potential for it to enter the Harbor and/or Bay. Dewatering effluent might require on-site treatment before the water is discharged to San Francisco Bay. The RWQCB could require an individual NPDES permit for dewatering activities.

Additionally, implementation of the SWPPP would include the following temporary environmental controls that would also minimize impacts on stormwater systems and water quality:

- Setting work area limits
- Protecting the landscape
- Reducing exposure of unprotected soils
- Protecting disturbed areas
- Installing erosion- and sediment-control devices
- Implementing hazardous material spill prevention measures
- Managing spoil areas
- Following good housekeeping procedures

With these temporary environmental controls and permanent management practices in place, the proposed project would not have a substantial impact on receiving water quality during proposed project construction activities.

Stormwater discharges from the long-term operation of the stormwater drainage system and outfalls to the Oakland Inner Harbor would contain typical pollutants from urban developed areas. Since the proposed storm drains that would discharge stormwater during future operations at the VA Development Area are being constructed under an easement on City land (see Figure 2-4 in *Project Description*), the City's MS4 NPDES Permit would apply during operations. The storm drain system and outfalls are being designed to meet City MS4 permit conditions, including consistency with approved TMDLs, by meeting requirements in the Clean Water Program C3 Technical Guidance Manual (<https://www.cleanwaterprogram.org/c3-guidance-table.html>). This manual provides hydraulic sizing criteria and water quality controls including best management practices (BMPs) such as low-impact-development practices, detention facilities, filtering devices, and other source control measures, as practical. Therefore, operation of the proposed storm drains would not have a substantial impact on receiving water quality.

Erosion, Siltation, and Sedimentation

Installing the outfall structures would require dewatering the footprint to allow access for trenching, stabilizing the shoreline slope, and installing the headwall sections. The area could be dewatered by constructing a temporary cofferdam at each outfall location. All cofferdam construction would occur at low tide when no water is present in the work area. Netting would be used during this work to contain debris and trash and prevent it from entering the Inner Harbor.

In addition to the storm drains and outfalls, the proposed project includes other stormwater management and water-quality-control structures located in upland areas. Bioswales and retention ponds would be created adjacent to roads and parking areas to provide infiltration and reduce sediment runoff from stormwater for these impervious areas, as well as provide water quality treatment for runoff. Stormwater treatment measures must be operated and maintained in compliance with the requirements of the Municipal Regional Stormwater NPDES Permit (MRP) (Order No. R2-2015-0049). All maintenance, monitoring, and reporting requirements in the MRP must be adhered to by the VA or its contractors. Based on these factors, impacts on water quality, erosion, and siltation would not be substantial.

There would be no urban stormwater discharges associated with the long-term operation of the wetland mitigation site. The on-site wetland mitigation area is intended to serve as mitigation for impacts to waters of the United States/state associated with future phases of cemetery construction. Constructing the wetland mitigation would require removing existing impervious areas and site grading. Grading would be done in conformance with the project SWPPP and NPDES Construction General Permit. The SWPPP would contain BMPs to reduce impacts from erosion and sedimentation during grading. Constructing the water-control structure as a part of on-site wetland mitigation would require dewatering inland of the seawall to allow access for seawall removal, excavation, and reinforcement. Dewatering would be accomplished through constricting a temporary cofferdam at the seawall breach location and in accordance with NPDES dewatering permit conditions. Netting would be used temporarily during the construction activities to minimize and contain debris and sediment entering San Francisco Bay. Seawall-removal activities are anticipated to cause approximately 0.16 acre of temporary impacts to open water of San Francisco Bay, caused by disturbance and mobilization of dirt and riprap into water while constructing the seawall breach. This activity would not cause any permanent impacts to San Francisco Bay and is being coordinated with NMFS (see Section 3.2) and BCDC (see *Coastal Consistency* below). Therefore, construction and operation of the proposed wetlands mitigation area would not have a substantial effect on receiving water quality resulting from erosion, siltation or sedimentation.

Coastal Consistency

No substantial long-term adverse impact is expected on coastal resources as a result of the new features being added to the proposed project. The proposed storm drains and the wetland mitigation area would be located within the coastal zone; however, the proposed project would be consistent with the CZMA and the provisions of the San Francisco Bay Plan. The new storm drains would not cause permanent impacts on or a reduction in the amount of BCDC jurisdictional waters. The wetland mitigation area would

add coastal resources; coordination with BCDC regarding the proposed project is ongoing.

Impact Summary

Table 3-6 summarizes the impacts to water quality and coastal consistency.

Table 3-6. Summary of Impacts to Water Quality and Coastal Consistency

Resource Area	Threshold Description	Level of Impact under NEPA
Water Quality and Coastal Consistency	Would the project result in adverse impacts to groundwater quality?	No significant construction-related impact
		No significant operational impact
	Would the project result in adverse impacts to surface water quality?	No significant construction-related impact
		No significant operational impact
	Would the project result in substantial erosion or siltation on or off-site?	No significant construction-related impact
		No significant operational impact
	Would the project result in adverse impacts to coastal resources?	No significant construction-related impact
		No significant operational impact

3.4 Transportation, Traffic, Circulation, and Parking

3.4.1 Regulatory Framework

Alameda County Transportation Commission

The Alameda County Transportation Commission (ACTC), the County's Transportation Authority, prepares, updates, and monitors the Congestion Management Program (CMP). It oversees the County's regional routes of significance functioning in all of its jurisdictions, including Oakland and Alameda. In this process, ACTC requires local jurisdictions to consistently evaluate and monitor the impact of proposed land use changes (that is, General Plan amendments and developments with a trip-generating potential of more than 100 new peak-hour vehicle trips) and to define any new deficiencies on the regional transportation system.

Alameda General Plan Element

The Alameda General Plan is consistent with the State of California's transportation planning objectives, standards, and requirements for local jurisdictions. For example, General Plan policies support infill, mixed-use development, and improvements to accessibility and mobility for all Alameda residents through multimodal strategies including cars, transit, bicycles, and walking. These concepts are also consistent with processes used to support and define action priorities for both the Metropolitan

Transportation Commission (MTC) Regional Transportation Plan and Sustainable Communities Strategy (for example, Plan Bay Area 2040) and the ACTC's Countywide Transportation Plan.

The most recent General Plan's Transportation Element was written so that decisions regarding the roadway network will consider the benefits and impacts of all travel modes and also the potential quality of life and safety impacts on Alameda neighborhoods associated with current and proposed future system operations. The following General Plan transportation element policies demonstrate consistency between State, MTC, and ACTC transportation planning objectives:

- **Policy 4.2.4.a** – Encourage development patterns and land uses that promote the use of alternate modes and reduce the rate of growth in regional Vehicle Miles Traveled (VMT)
- **Policy 4.2.4.b** – Integrate planning for Environmentally Friendly Modes, including transit, bicycling, and walking into the City's development review process
- **Policy 4.3.1.c** – Actively encourage increases in public transit, including frequency and geographic coverage
- **Policy 4.3.1.h** – Encourage the creation of transit-oriented development and mixed-use development
- **Policy 4.4.2.a** – Roadways will not be widened to create additional automobile travel lanes (e.g., capacity) and accommodate additional automobile traffic volumes with the exception of increasing transit exclusive lanes and/or non-motorized vehicle lanes
- **Policy 4.4.2.b** – Intersections will not be widened beyond the width of the approaching roadway with the exception of a single exclusive left turn lane when necessary, and with the exception of increasing transit exclusive lanes or non-motorized vehicle lanes.
- **Policy 4.4.2.e** – Mitigations for future development should be solely directed to reduce traffic applying transportation demand management measures, transit, bicycle and pedestrian capital projects, as well as more efficient use of existing infrastructure with traffic signal re-timing (e.g., optimization) to reduce the negative environmental effects of development, rather than attempting to accommodate them.

Climate Action Plan

Alameda prepared and adopted a Local Action Plan for Climate Protection in 2008, establishing a citywide goal of reducing greenhouse gas (GHG) emissions by 25 percent below 2005 levels by 2020. The Climate Action Plan states that more than 54 percent of Alameda's GHG emissions are produced by local mobile transportation sources. Reducing VMT by Alameda residents and travelers to and from Alameda will provide the single most effective means of reducing GHG emissions in the city.

State Senate Bill 743

In 2013, Senate Bill 743 (SB 743) was codified in PRC Section 21099, which proposed a change in how transportation impacts are analyzed in transit priority areas to better align

local environmental review with statewide objectives. These alignment considerations include reductions to GHG emissions, encouragement of infill mixed-use development in designated priority development areas, reductions of regional sprawl land development, and reductions in mobile source VMT. In addition, SB 743 supports and complements the following State Bills and Executive Orders (EOs) relevant to this Proposed Action:

- Assembly Bill 32 (AB 32) requires statewide GHG emissions be reduced below 1990 levels by 2035. Together, Senate Bill 375 and California Air Resources Board (ARB) established GHG reduction targets for metropolitan planning organizations to incorporate in Regional Transportation Plans and Sustainable Community Strategies. The largest metropolitan planning organizations have targets to reduce emissions by 13 to 16 percent.
- Senate Bill 391 requires that the California Transportation Plan support an 80 percent reduction in GHGs below 1990 levels by 2050.
- EO B-30-15 sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030.
- EO S-3-05 sets a GHG emissions reduction target of 80 percent below 1990 levels by 2050.
- EO B-16-12 specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.

In April 2018, the Governor's Office of Planning and Research released the proposed update to the California Environmental Quality Act (CEQA) Guidelines consistent with SB 743, recommending VMT, both within and outside of transit priority areas, as the most appropriate metric of transportation impact. This metric will align with local environmental review under CEQA and with California's long-term GHG emissions reduction goals.

3.4.2 Affected Environment

VA Transfer Parcel

Figure 3-1 illustrates the location and the vicinity of the VA Transfer Parcel. It is located on the former NAS Alameda Airfield in Alameda. Roadways within the VA Transfer Parcel are not publicly accessible.

Figure 3-1. VA Transfer Parcel Vicinity Map



Surrounding Area

Regional Access

Regional access to and from the VA Transfer Parcel is provided primarily by I-880. Additional regional facilities that provide access to and from the VA Transfer Parcel include I-980, State Route 24 (SR 24), State Route 61 (SR 61), and State Route 260 (SR 260).

- I-880 provides a northwest-to-southeast access across Oakland and travels through other East Bay cities of San Leandro, Hayward, Union City, Newark, Fremont, and Milpitas to San José. I-880 also provides direct access to and from San Francisco through the Interstate 80 (I-80)/San Francisco Oakland Bay Bridge.
- I-980 provides a north-to south access across Oakland and connects I-880 to SR 24 and Interstate 580 (I-580).
- SR 24 provides an east-to-west access from the Oakland area to Contra Costa County.
- SR 61 provides a northwest-to-southeast access from San Leandro through Alameda to Oakland. It travels south from Oakland across Webster Tube, through Alameda, then across the Bay Farm Island Bridge to San Leandro. It consists of principal

arterial roadways in the study area, including Doolittle Drive, Otis Drive, Broadway (Alameda), Encinal Avenue, and Webster Street.

- SR 260 (Webster and Posey Tubes) connects Alameda and Oakland and serves as the most direct connection between I-880 and the VA Transfer Parcel. The Webster Tube serves southbound traffic from Oakland to Alameda, while the Posey Tube serves northbound traffic from Alameda to Oakland.

Local Access

Local access to and from the VA Transfer Parcel is provided by the 14 major arterial streets, as illustrated in Figure 3-2 and Figure 3-3 and described below.

- Broadway, classified as a principal arterial by the California Department of Transportation (Caltrans), is a major four-lane, two-way, north-to-south roadway in downtown Oakland with on-street parking in each direction and providing access to I-880 and the Webster Tube to Alameda at 5th Street.
- Webster Street, classified as a minor arterial by Caltrans, is a one-way, three-lane southbound roadway with on-street parking in Oakland. Webster Street begins at 51st Street in the north, proceeds through downtown Oakland, and provides access into Alameda via the Webster Tube. Webster Street in Alameda is a two-lane, north-to-south roadway with on-street parking in each direction and provides connections to the Webster and Posey Tubes into and out of Oakland. The Webster Tube consists of two one-way lanes and carries Alameda-bound traffic. The Posey Tube also consists of two one-way lanes and carries Oakland-bound traffic.
- Harrison Street, classified as a minor arterial by Caltrans, is a one-way, three-lane northbound roadway with on-street parking in Oakland. Harrison Street begins at the southern end of Oakland, discontinues at 5th Street, and then continues north from the Posey Tube on 7th Street.
- Jackson Street, classified by Caltrans as a major collector, is a two-lane, two-way, north-to-south roadway with on-street parking in each direction. Jackson Street provides access to I-880 at 5th and 6th Streets.
- 8th Street, classified as a minor arterial by Caltrans, is a one-way, four-lane westbound roadway in downtown Oakland with on-street parking in each direction.
- 7th Street, classified as a minor arterial by Caltrans, is a one-way, four-lane eastbound roadway in downtown Oakland with on-street parking in each direction.
- 6th Street, classified as a major collector by Caltrans, is located west of Broadway and east of Jackson Street (and north of I-880). It is a one-way, two-lane westbound roadway located in downtown Oakland, providing access to I-880.
- 5th Street, classified as a minor arterial by Caltrans, is a one-way, three-lane eastbound roadway located south of the I-880 in downtown Oakland, providing access to the Webster Tube and I-880 at Broadway.

Figure 3-2. Study Intersections and Roadways (North)

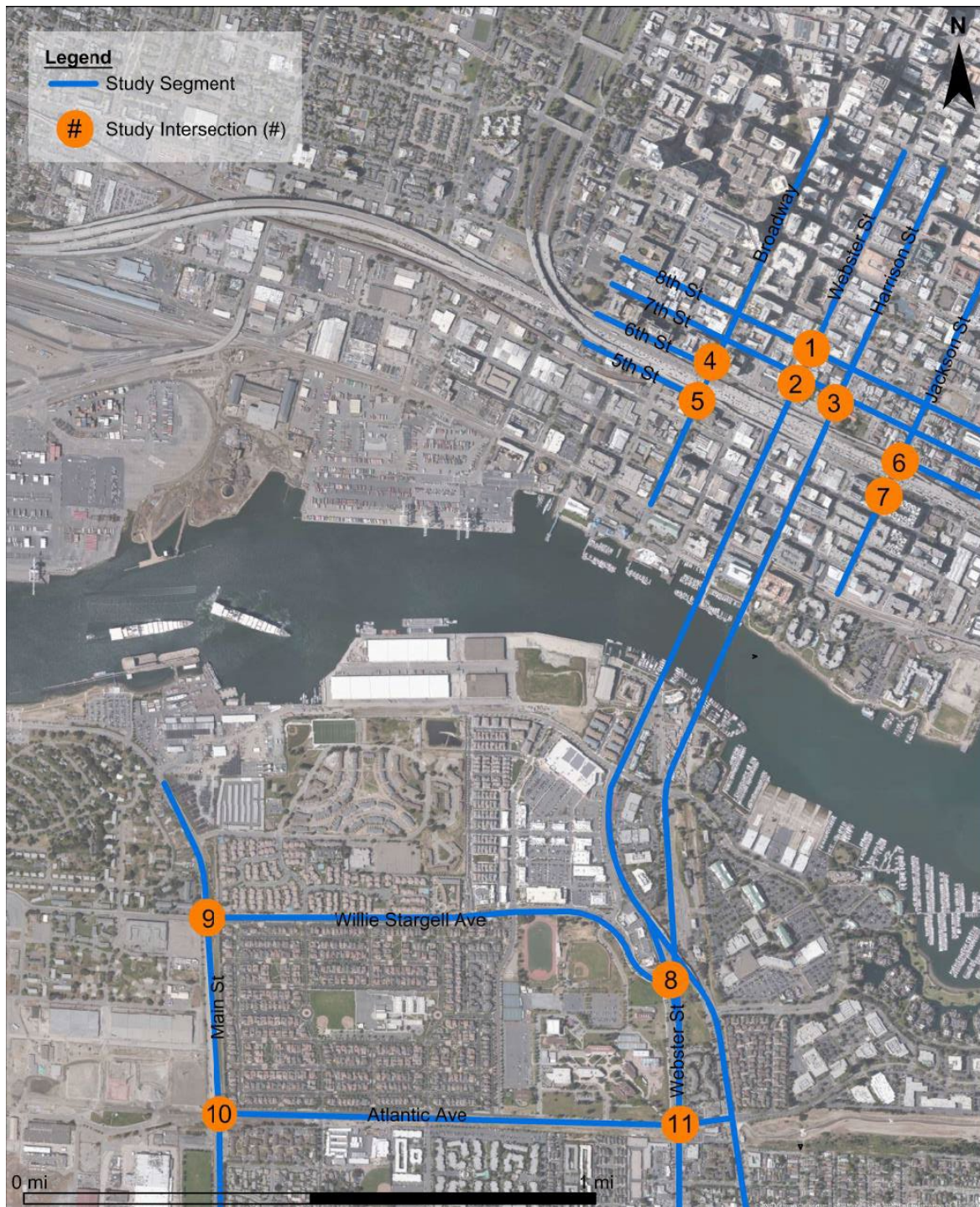
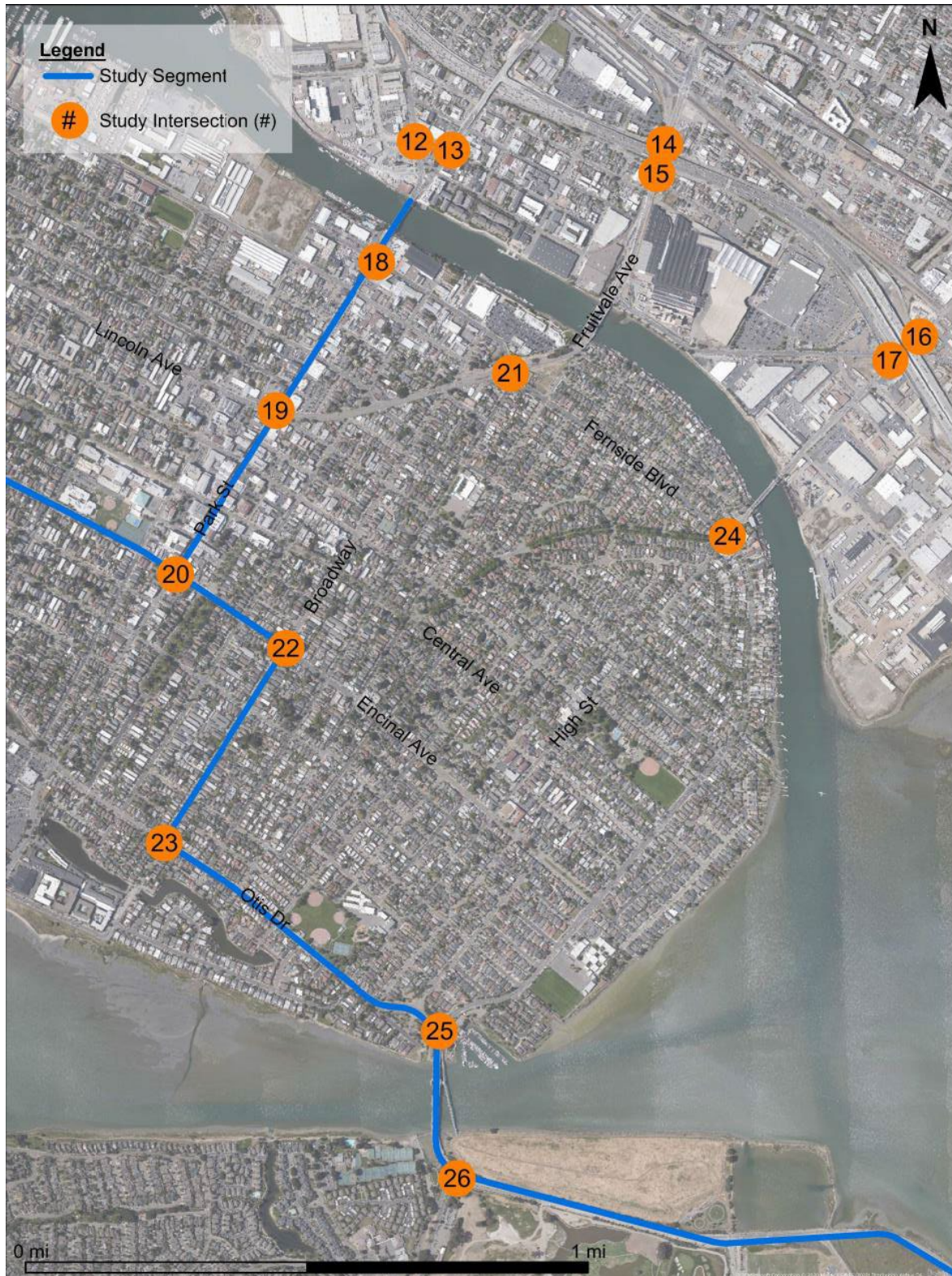


Figure 3-3. Study Intersections and Roadways (South)



- Main Street, classified as a principal arterial by Caltrans, is a four-lane, north-to-south roadway located in Alameda. It begins at Pacific Avenue, just south of Atlantic Avenue, does not allow on-street parking, and provides access into and out of the VA Transfer Parcel.
- Willie Stargell Avenue is a local east-to-west roadway located in Alameda providing access to and from the Webster and Posey Tubes into and out of Oakland. It includes two lanes and one bike lane in each direction to the west of Webster Street, and then narrows to a residential street west of Webster Street with one lane in each direction.
- Atlantic Avenue, classified as a principal arterial by Caltrans, is the southernmost roadway in the study area. It currently includes two lanes with no on-street parking in each direction and provides access to and from the Posey and Webster Tubes at Webster Street in Alameda.
- Park Street, classified as a principal arterial by Caltrans, connects Oakland to South Alameda through the Park Street Bridge, and travels north-to-south through the busy area of Downtown Alameda. It includes two lanes in each direction and on-street parking on both sides.
- Fruitvale Avenue, Tilden Way, and Lincoln Avenue, all classified as principal arterials by Caltrans, connect Oakland to South Alameda through the Fruitvale Bridge, and travel east-to-west through Alameda Island to connect Webster and Main Streets. The route includes two lanes and no on-street parking in each direction with bike lanes on both sides through a portion of the study segments.
- High Street, classified as a minor arterial by Caltrans, connects Oakland to South Alameda through the High Street Bridge, and travels north-to-south through the south side of Alameda. It primarily includes one lane and on-street parking in each direction.

Existing Traffic Conditions

Intersection Level of Service

VA TRANSFER PARCEL

An intersection level of service (LOS) analysis was not conducted within the VA Transfer Parcel because of prohibited public access. However, the proposed project has been designed to accommodate the anticipated traffic volume and capacity and includes traffic safety measures.

SURROUNDING AREA

Eleven study intersections in north Alameda and downtown Oakland, and 15 study intersections in south Alameda and other connecting areas of Oakland, were selected to be analyzed. The 11 study intersections in the north Alameda and downtown Oakland area are consistent with those selected in the VA's 2013 EA. The 15 study intersections in south Alameda and related areas in Oakland are new for this analysis. The additional 15 study intersections were selected from the City of Alameda's 2013 Alameda Point EIR based on their significance to the VA's Proposed Action. The combined 26 study

intersections include the following, and the lane configuration information for each of these intersections is available in Appendix D, *Final Transportation Report*:

North Alameda/Downtown Oakland Intersections:

1. Webster Street and 8th Street (Oakland)
2. Webster Street and 7th Street (Oakland)
3. Harrison Street and 7th Street (Oakland)
4. Broadway and 6th Street (Oakland)
5. Broadway and 5th Street (Oakland)
6. Jackson Street and 6th Street (Oakland)
7. Jackson Street and 5th Street (Oakland)
8. Webster Street and Willie Stargell Avenue (Alameda)
9. Main Street and Willie Stargell Avenue (Alameda)
10. Main Street and Atlantic Avenue (Alameda)
11. Webster Street and Atlantic Avenue. (Alameda)

South Alameda/Oakland Intersections:

1. 23rd Avenue and Ford Street (Oakland)
2. 29th Avenue and Ford Street (Oakland)
3. Fruitvale Avenue and East 9th Street (Oakland)
4. Fruitvale Avenue and East 8th Street (Oakland)
5. High Street and Coliseum Way (Oakland)
6. High Street and Oakport Street (Oakland)
7. Park Street and Blanding Avenue (Alameda)
8. Park Street and Lincoln Avenue (Alameda)
9. Park Street and Encinal Avenue (Alameda)
10. Tilden Way and Fernside Boulevard (Alameda)
11. Broadway and Encinal Avenue (Alameda)
12. Broadway and Otis Drive (Alameda)
13. High Street and Fernside Boulevard (Alameda)
14. Otis Drive and Fernside Boulevard (Alameda)
15. Island Drive and Doolittle Drive (Alameda)

The ordinary practice of establishing and analyzing the 2020 Existing Condition would begin with collecting new traffic counts at the study intersections and appropriate roadway segments. However, 2020 traffic counts were not able to be conducted for this project because the study area and surrounding region were, at the time of the analysis, observing a “shelter-in-place” order in response to the COVID-19 global pandemic. Any

traffic counts conducted during this pandemic period would have limited usefulness and not represent typical conditions. To approximate the 2020 Existing Condition peak hour volumes, the baseline data were collected from various sources, such as 2013 Alameda Point EIR, and other newer sources including 2020 Oakland-Alameda Access Project (referred to here as 2020 OAAP). Table 3-7 summarizes the baseline data collection sources for each of the study intersections.

Table 3-7. Study Intersection Baseline Data Sources

No.	Intersection Name (North–South/East–West)	Source
1	Webster Street and 8th Street (Oakland)	2020 OAAP
2	Webster Street and 7th Street (Oakland)	2020 OAAP
3	Harrison Street and 7th Street (Oakland)	2020 OAAP
4	Broadway and 6th Street (Oakland)	2020 OAAP
5	Broadway and 5th Street (Oakland)	2020 OAAP
6	Jackson Street and 6th Street (Oakland)	2020 OAAP
7	Jackson Street and 5th Street (Oakland)	2020 OAAP
8	Webster Street and Willie Stargell Avenue (Alameda)	2020 OAAP
9	Main Street and Willie Stargell Avenue (Alameda)	2013 Alameda Point EIR
10	Main Street and Atlantic Avenue (Alameda)	2013 Alameda Point EIR
11	Webster Street and Atlantic Avenue (Alameda)	Alameda (City)
12	23rd Avenue and Ford Street (Oakland)	2013 Alameda Point EIR
13	29th Avenue and Ford Street (Oakland)	2013 Alameda Point EIR
14	Fruitvale Avenue and East 9th Street (Oakland)	2013 Alameda Point EIR
15	Fruitvale Avenue and East 8th Street (Oakland)	2013 Alameda Point EIR
16	High Street and Coliseum Way (Oakland)	2013 Alameda Point EIR
17	High Street and Oakport Street (Oakland)	2013 Alameda Point EIR
18	Park Street and Blanding Avenue (Alameda)	2013 Alameda Point EIR
19	Park Street and Lincoln Avenue (Alameda)	2013 Alameda Point EIR
20	Park Street and Encinal Avenue (Alameda)	2018 Caltrans Data
21	Tilden Way and Fernside Boulevard (Alameda)	2013 Alameda Point EIR
22	Broadway and Encinal Avenue (Alameda)	2018 Caltrans Data
23	Broadway and Otis Drive (Alameda)	2013 Alameda Point EIR
24	High Street and Fernside Boulevard (Alameda)	2013 Alameda Point EIR
25	Otis Drive and Fernside Boulevard (Alameda)	2013 Alameda Point EIR
26	Island Drive and Doolittle Drive (Alameda)	2013 Alameda Point EIR

The peak hour roadway segment growth forecasts from the Alameda County Travel Demand Model (ACTD Model; reference) were then applied to the baseline data to develop the 2020 Existing Condition morning (AM), afternoon (PM), and Saturday peak hour traffic volumes. The comparison of 2010 and 2040 growth forecasts (that is, the

model-derived roadway segment link volumes) indicated an average Alameda Island annual growth rate of 1.33 percent for the AM peak hour and 1.24 percent for the PM peak hour. A version of the ACTD Model for the Saturday peak hour is not available, thus the weekday PM peak hour growth rate was also used to derive Saturday peak hour future volumes.

These growth rates account for the change in traffic volume attributable to land use changes documented in the General Plans for all cities within Alameda County and surrounding areas. Existing conditions traffic volumes were estimated using the peak hour traffic volumes gathered from local agencies and publicly available documents (Table 3-7), plus the projected growth between the year of the counts and 2020 using the growth rates derived from the ACTD Model. Details of the computed 2020 Existing Condition peak hour turn movement volumes are available in Appendix D. The signalized intersection operations were analyzed using the operational analysis procedure outlined in the 2010 *Highway Capacity Manual* and implemented using Synchro 10 traffic analysis software. These commonly accepted methods are applied to evaluate intersection operations from LOS A (best operating) through LOS F (worst operating), characterized by the average stopped delay per vehicle. LOS is a measure of driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time. Table 3-8 presents the LOS definitions and criteria used for this analysis.

According to City guidelines, an acceptable LOS is LOS D or better for study intersections in Alameda. Substantial impacts would be identified in Alameda if the proposed action degraded intersections from an acceptable LOS D or better to an unacceptable LOS E or worse. For the intersections already operating at an unacceptable LOS E or worse, substantial impacts would be identified in Alameda if the proposed action increases the intersection volume by 3 percent or more. In Oakland, no threshold for LOS analysis is currently available because this analysis has been superseded by the VMT analysis, according to the latest version of the Oakland *Transportation Impact Review Guidelines*. To develop a consistent threshold compared with that used by the City of Alameda, an LOS threshold for the study intersections in Oakland was developed. The study intersections in Oakland are located in CMP roadway networks, where LOS E or better is considered an acceptable LOS. Thus, the study intersections in Oakland were assigned to have a threshold of LOS E, and LOS F will therefore be considered an unacceptable LOS. Table 3-8 provides brief descriptions for each LOS designation.

Table 3-8. Level of Service Definitions for Signalized Intersections

Average Stopped Delay per Vehicle (seconds)	Level Of Service Characteristics
<10.0	LOS A is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	LOS B is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	LOS C is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is substantial, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	LOS D is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable
55.1 – 80.0	LOS E is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	LOS F is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: *Highway Capacity Manual* (2010)

Intersection operations were evaluated for the AM, PM, and Saturday peak hours in the 2020 Existing Condition. Table 3-9 summarizes the LOS results at all 26 study intersections during the AM, PM, and Saturday peak hours. The Tilden Way and Fernside Boulevard intersection in Alameda operates at an unacceptable LOS E during the PM peak hour under existing conditions.

Table 3-9. 2020 Existing Condition AM, PM, and Saturday Peak Hour Intersection Levels of Service

No.	Intersection Location	AM		PM		Saturday	
		Delay	LOS	Delay	LOS	Delay	LOS
1	Webster Street and 8th Street (O)	19.0	B	20.4	C	19.3	B
2	Webster Street and 7th Street (O)	12.0	B	19.6	B	11.4	B
3	Harrison Street and 7th Street (O)	16.0	B	43.8	D	19.8	B
4	Broadway and 6th Street (O)	14.7	B	20.1	C	9.6	A
5	Broadway and 5th Street (O)	35.5	D	47.5	D	17.2	B
6	Jackson Street and 6th Street (O)	23.6	C	15.1	B	10.1	B
7	Jackson Street and 5th Street (O)	13.9	B	17.7	B	13.4	B
8	Webster Street and Willie Stargell Avenue (A)	11.7	B	13.6	B	7.9	A
9	Main Street and Willie Stargell Avenue (A)	9.5	A	9.2	A	6.9	A
10	Main Street and Atlantic Avenue (A)	13.6	B	16.5	B	16.2	B

No.	Intersection Location	AM		PM		Saturday	
		Delay	LOS	Delay	LOS	Delay	LOS
11	Webster Street and Atlantic Avenue (A)	28.3	C	26.0	C	28.1	C
12	23rd Avenue and Ford Street (O)	4.3	A	9.0	A	5.5	A
13	29th Avenue and Ford Street (O)	18.8	B	24.3	C	16.7	B
14	Fruitvale Avenue and East 9th Street (O)	64.0	E	77.7	E	27.9	C
15	Fruitvale Avenue and East 8th Street (O)	12.6	B	16.9	B	12.5	B
16	High Street and Coliseum Way (O)	45.0	D	63.5	E	31.9	C
17	High Street and Oakport Street (O)	22.6	C	35.4	D	22.5	C
18	Park Street and Blanding Avenue (A)	16.3	B	14.8	B	11.7	B
19	Park Street and Lincoln Avenue (A)	18.1	B	21.4	C	16.8	B
20	Park Street and Encinal Avenue (A)	24.3	C	22.4	C	19.8	B
21	Tilden Way and Fernside Boulevard (A)	30.1	C	67.1	E	38.5	D
22	Broadway and Encinal Avenue (A)	14.8	B	15.5	B	12.9	B
23	Broadway and Otis Drive (A)	31.4	C	47.8	D	27.4	C
24	High Street and Fernside Boulevard (A)	48.4	D	37.6	D	32.6	C
25	Otis Drive and Fernside Boulevard (A)	41.8	D	28.9	C	21.9	C
26	Island Drive and Doolittle Drive (A)	36.5	D	23.0	C	16.5	B

Notes: (A) = Alameda, (O) = Oakland

Roadway Segments

VA TRANSFER PARCEL

A roadway segment analysis was not conducted within the VA Transfer Parcel because of prohibited public access. However, the proposed project has been designed to accommodate the anticipated traffic volume and capacity and includes traffic safety measures.

SURROUNDING AREA

The ACTC CMP established LOS E as the standard for roadway segments using LOS monitoring for the transportation network. Certain segments were identified as “grandfathered segments” if they were already operating at LOS F during the PM peak hour in 1991 when existing LOS were established for the CMP network. Webster Street from 7th/Webster Street to Atlantic Street (includes Webster Tube) is the only CMP segment assessed under the proposed project that is identified as grandfathered.

The CMP segments were evaluated using volume-to-capacity (v/c) ratios to measure roadway performance. This analysis has been traditionally applied to assess roadway operations with v/c ratios greater than 1.0 indicating overcapacity and LOS F. Since speed proves difficult to predict for future segment operations condition, the v/c ratio was primarily used to analyze the performance of study roadway segments, and speed analysis was selectively conducted only for a few arterial segments in Alameda to serve

as a supplementary performance measure. The PM peak hour was evaluated because it represents the worst-case operations condition for the freeway and roadway segments in the study area. The Proposed Action would have a substantial impact if it increases the v/c ratio by 0.03 or more for any given roadway segment that operates over the capacity (v/c greater than 1.0: LOS F) without the Proposed Action. The Proposed Action would also have a substantial impact if it increases the v/c ratio to over the capacity (v/c over 1.0) for any given roadway segment that was operating under the capacity (that is, degrading a segment from LOS E or better to LOS F).

Freeway segment v/c ratios were evaluated applying a consistent approach with the previous analysis documented in the 2013 Alameda Point EIR. Speed analysis was conducted on Main Street, Atlantic Avenue, Webster Street, Park Street, and Otis Drive using the Synchro 10 model. These arterials are the primary roadways used to access the VA Transfer Parcel. The proposed action would have an impact if speed is reduced by 10 percent or more compared with the speed without the proposed action.

Table 3-10 presents the 17 arterial segments that were studied in this analysis across Oakland and both North and South Alameda. Four additional I-880 freeway segments were included as a part of the study as follows:

- West of I-980
- East of Oak Street
- West of Park Street
- East of High Street

Table 3-10. Study CMP Arterial Segments

No.	Roadway	From	To
1	SR 61 (Doolittle Drive)	Oakland City Limit	Fernside Boulevard
2	SR 61 (Otis Drive)	Fernside Boulevard	SR 61 (Broadway)
3	SR 61 (Broadway)	Otis Drive	SR 61 (Encinal Avenue)
4	SR 61 (Encinal Avenue)	SR 61 (Broadway)	Sherman Street
5	Posey/Webster Tubes	SR 260 (Webster Street)	Oakland City Limit
6	Atlantic Avenue	SR 260 (Webster Street)	Main Street
7	Park Street	Oakland City Limit	Central Avenue
8	Park Street	Central Avenue	SR 61 (Encinal Avenue)
9	Main Street	Atlantic Avenue	Willie Stargell Avenue
10	Webster Street	Atlantic Avenue	Willie Stargell Avenue
11	Webster Street	7th Street	8th Street
12	Harrison Street	7th Street	8th Street
13	5th Street	Washington Street	Broadway
14	Broadway	5th Street	6th Street
15	Broadway	5th Street	4th Street
16	7th Street	Harrison Street	Alice Street

No.	Roadway	From	To
17	Jackson Street	7th Street	6th Street

Table 3-11 summarizes the v/c ratio analysis results for the 17 study arterial segments in the 2020 Existing Condition during the PM peak hour. As presented, the SR 61 (Doolittle Drive) segment from Oakland City Limit to Fernside Boulevard (#1) operated at a v/c exceeding 1.00, and thus over capacity, while other segments all operated well under the v/c of 1.00.

Table 3-11. 2020 Existing Condition PM Peak Hour CMP Arterial Segments Volume-to-Capacity Ratios

No.	Roadway	PM Peak Hour Volume to Capacity Ratio	
		Northbound/Eastbound	Southbound/Westbound
1	SR 61 (Doolittle Drive)	1.38	1.24
2	SR 61 (Otis Drive)	0.92	0.72
3	SR 61 (Broadway)	0.63	0.69
4	SR 61 (Encinal Avenue)	0.40	0.29
5	Posey/Webster Tubes	0.53	0.47
6	Atlantic Avenue	0.39	0.16
7	Park Street	0.71	0.57
8	Park Street	0.36	0.32
9	Main Street	0.10	0.15
10	Webster Street	0.50	0.58
11	Webster Street	—	0.54
12	Harrison Street	0.34	—
13	5th Street	0.49	—
14	Broadway	0.15	0.41
15	Broadway	0.28	—
16	7th Street	0.78	—
17	Jackson Street	0.54	0.86

Table 3-12 summarizes the v/c ratio analysis results for the four freeway segments in the 2020 Existing Condition during the PM peak hour. As presented, all segments operate under the v/c of 1.00.

Table 3-12. 2020 Existing Condition PM Peak Hour CMP Freeway Segment of I-880 v/c Ratios

Segment List	Northbound	Southbound
West of I-980	0.72	0.71

Segment List	Northbound	Southbound
East of Oak Street	0.79	0.71
West of Park Street	0.81	0.90
East of High Street	0.66	0.86

Transit

VA TRANSFER PARCEL

No transit service currently operates within the VA Transfer Parcel.

SURROUNDING AREA

Public transit service in the study area is primarily provided by the Alameda-Contra Costa Transit District (AC Transit). Table 3-13, Figure 3-4, and Figure 3-5 illustrate and summarize the eight bus routes in the study area. Route 851 is an off-peak nighttime service that operates from midnight to 5:00 AM and is not illustrated in the figure. Two routes, O and W, provide access to and from San Francisco, while the other five daytime routes connect Alameda to and from Oakland. Route 96 provides the closest bus stop to the VA Transfer Parcel among the six bus routes summarized.

Table 3-13. 2020 Existing Condition Alameda-Contra Costa Transit District Bus Service in the Study Area

Line	Route Description	Frequency (in minutes)	
		AM Peak	PM Peak
O	Fruitvale BART to Transbay Temporary Terminal, San Francisco, via Fruitvale Bridge, Fenside Blvd., High St., Encinal Ave., Broadway, Santa Clara Ave., and Webster St.	15–30	10–20
W	Broadway and Blanding Ave., Alameda, to Transbay Temporary Terminal, San Francisco via Fenside Blvd., High St., Otis Dr., and Webster St.	15–30	15–30
19	From Downtown Oakland to Fruitvale BART via the Webster/Posey tubes, Atlantic Ave., Buena Vista Ave., Alameda Bridgeside Center, and Fruitvale Ave.	20	20
20	Dimond District, Oakland, to downtown Oakland via Fruitvale Ave., Fruitvale BART, Park St., Alameda Towne Centre, Shoreline Dr., Grand St., Otis Dr., Westline Dr., Central Ave., and Webster St.	30	30
21	Dimond District, Oakland, to Oakland Airport via Fruitvale Ave., Fruitvale BART, Park St., Alameda Towne Center, and Bay Farm Island	30	30
51A	Rockridge BART to Fruitvale BART via College Ave., Broadway (Oakland), Webster St., Santa Clara Ave., and Broadway (Alameda).	10	10
96	Alameda Point to Dimond District via Midway Ave., Lincoln Ave., Marina Village Parkway, Webster/Posey tubes, Downtown Oakland, E. 12th St., 14th Ave., and Highland Hospital.	30	30
851	All Nighter. Downtown Berkeley to Fruitvale BART via Southside Berkeley (University of California campus), College Ave., Broadway, downtown Oakland, Webster St., Santa Clara Ave., Broadway, and Fruitvale Ave.	NA	NA

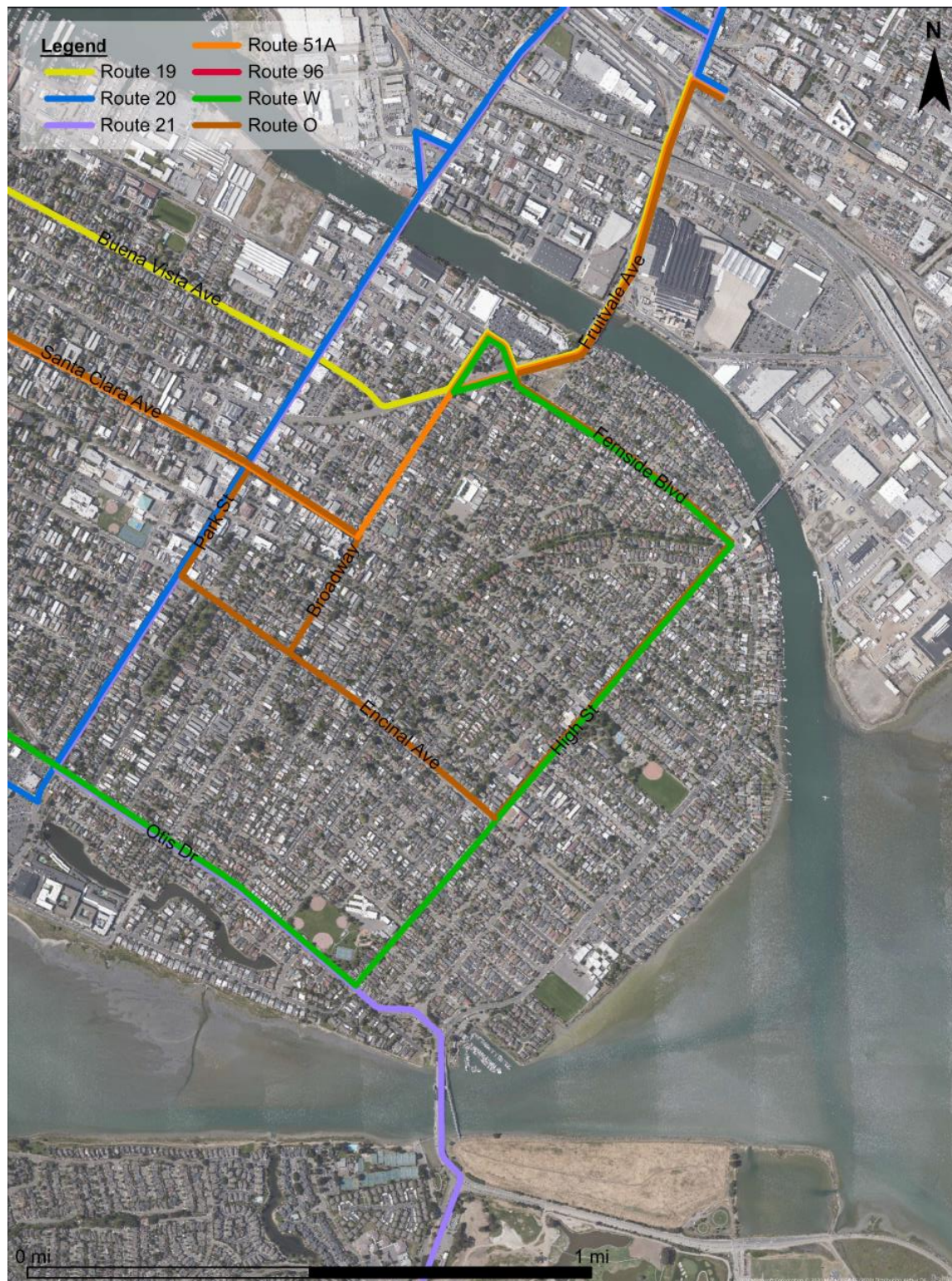
Source: AC Transit (2018)

Note: NA = not applicable

**Figure 3-4. 2020 Existing Condition Alameda-Contra Costa Transit District
Bus Routes in the Study Area (North)**



Figure 3-5. 2020 Existing Condition Alameda-Contra Costa Transit District Bus Routes in the Study Area (South)



In addition, Alameda provides a free senior shuttle service called Alameda Landing Express, which is open to the public. The free shuttle runs from Tuesday to Thursday from 8:30 AM to 4:00 PM using three, daily varying routes. The three free shuttle routes are:

- West Loop (between Alameda Landing and downtown Alameda)
- East Loop (between Bay Farm Island, downtown Alameda, and Mastick Senior Center)
- Central Loop (between downtown Alameda, Shore Line Drive, and Bridgeside Center)

Additionally, the VA owns and operates a shuttle between Martinez clinic to and from the current Oakland clinic, encompassing six daily trips. The shuttle capacity provides for service to 16 passengers or 12 passengers with two wheelchairs. The current total average daily ridership is 25 passengers. As discussed in the project description, under the proposed project, this shuttle route would be revised to add a stop at the VA Transfer Parcel in the future, with the service anticipated to add another vehicle.

Bay Area Rapid Transit (BART) provides regional commuter rail service in Alameda, Contra Costa, San Francisco, and San Mateo Counties. The nearest BART stations to the VA Transfer Parcel include the 12th Street Oakland City Center, Lake Merritt, and Fruitvale Stations. While each of these BART Stations is not within walking distance of the VA Transfer Parcel, limited AC Transit bus services provide connections from BART to the VA Transfer Parcel (nearest bus stop is approximately 0.5 miles from the VA Transfer Parcel). However, as discussed in the project description, the proposed project includes the addition of a bus stop at the proposed facilities. Further, the existing VA shuttle service would add a stop at the Oakland 12 Street BART station as part of the proposed project. BART operates on weekdays from 4:00 AM to 1:00 AM, on Saturdays from 6:00 AM to 1:00 AM, and on Sundays from 8:00 AM to 1:00 AM. Each individual BART line operates with train frequencies of every 15 to 20 minutes.

The Water Emergency Transportation Authority provides ferry services between Alameda and San Francisco. Ferries can be accessed at the Alameda Main Street Terminal on the northern shore of Alameda Island or at Jack London Square Terminal in Oakland. Both stations are several miles from the VA Transfer Parcel and can be accessed by automobile, AC Transit buses, and pedestrian and bicycle. Because of heavy demand, the Water Emergency Transportation Authority increased frequencies to and from Alameda. It is also working with Alameda to construct a terminal at the Seaplane Lagoon at Alameda Point, close to the VA Transfer Parcel.

Amtrak provides service to and from the Oakland Jack London Square Amtrak station. Jack London Square can be accessed from the VA Transfer Parcel by automobile, AC Transit bus, and pedestrian and bicycle modes. This station is a stop on Amtrak's Capitol Corridor and San Joaquin routes. The Capitol Corridor serves Sacramento and Auburn to the east and Fremont and San José to the south, operating 15 trains in each direction on weekdays and 11 trains in each direction on weekends. The Amtrak San Joaquin serves the Central Valley cities of Stockton, Fresno, and Bakersfield and operates six trains in each direction on a daily basis.

Pedestrian

VA TRANSFER PARCEL

Pedestrians are currently prohibited from entering the VA Transfer Parcel.

SURROUNDING AREA

Alameda and Oakland currently lack pedestrian connectivity because of limited pedestrian routes from Downtown Oakland to Alameda. Pedestrians are currently limited to a single route to and from Downtown Oakland to Alameda using a multiuse path along the Posey Tube. However, this path is narrow, dark, and noisy, and is currently shared with bicycles, exposing pedestrians to greater risks.

Bicycle

Bicycle facilities in the study area, in both Alameda and Oakland, include four classes, as defined in the Caltrans *Highway Design Manual*:

- **Class 1 Bicycle Path:** Facilities with an exclusive right-of-way for bicyclists and pedestrians, away from the roadway and with cross-flows by automobile traffic minimized
- **Class 2 Bicycle Lane:** Facilities established along streets and defined by pavement striping and signage to delineate a portion of a roadway for bicycle travel
- **Class 3 Bicycle Route:** Facilities designated as a preferred route for bicyclists on streets shared with auto traffic not served by dedicated bikeways often marked by route signs
- **Class 4 Separated Bikeway:** Facilities established along streets and defined by not only pavement striping and signage, but also a complete separation with barriers such as on-street parking, grade separation, delineator poles to define a portion of roadway for bicycle travel.

VA TRANSFER PARCEL

Cyclists are currently prohibited from entering the VA Transfer Parcel.

SURROUNDING AREA

The bicycle network lacks consistency in route connection and coverage. For example, there are no designated bicycle network facilities and limited bicycle access available in the study area in downtown Oakland. In Alameda, there is a gap in the bicycle network connections on both Atlantic Avenue and Willie Stargell Avenue. Bicycle access between downtown Oakland and Alameda is possible through the multiuse bicycle path through the Posey Tube; however, this path is narrow and is shared with a pedestrian traffic. Figure 3-6 and Figure 3-7 illustrate the existing bicycle network consisting of Class 1, Class 2, and Class 3 bikeways in the study area, according to the Alameda Countywide Bicycle Plan.

Figure 3-6. 2020 Existing Condition Bicycle Network in the Study Area (North)

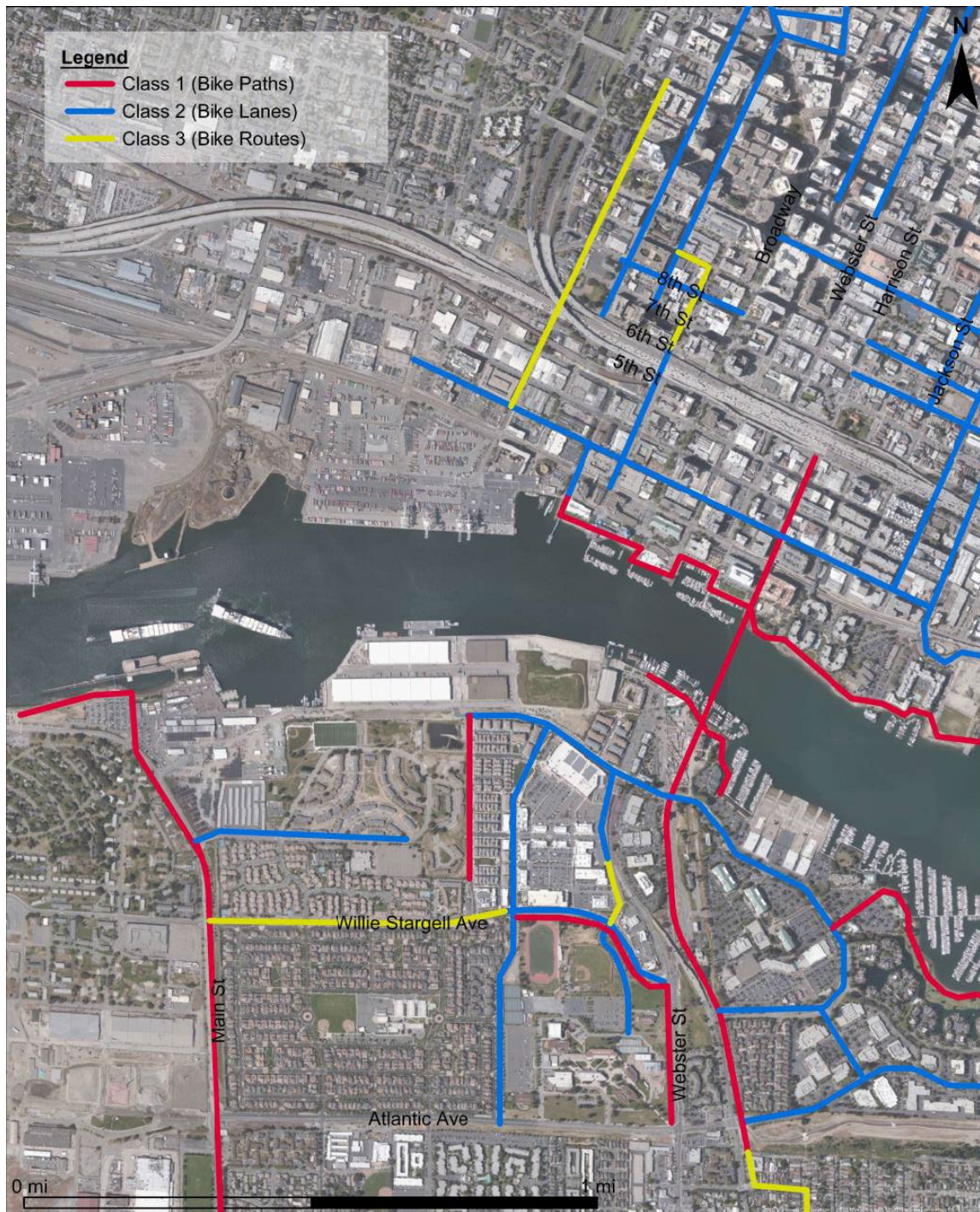
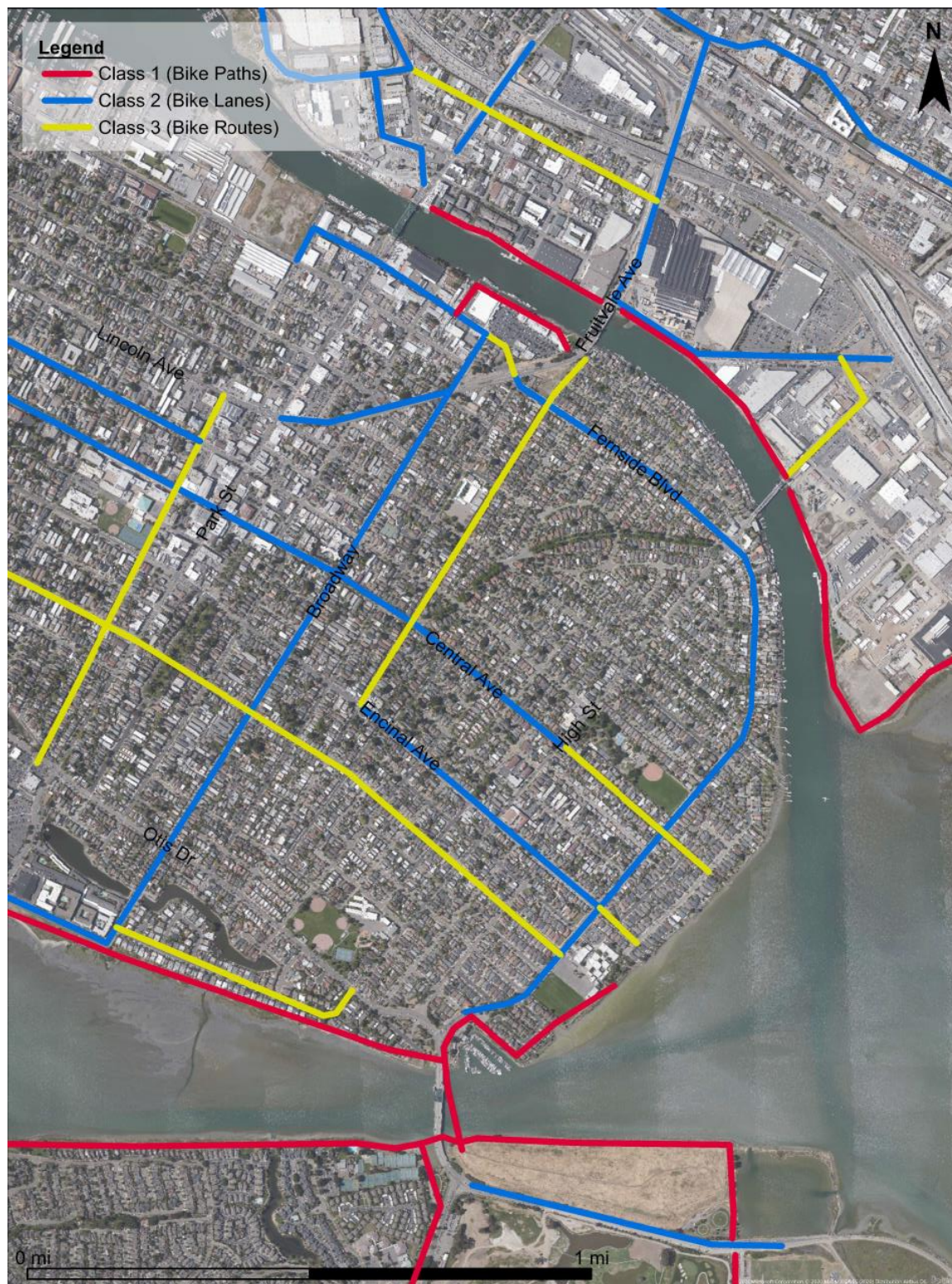


Figure 3-7. 2020 Existing Condition Bicycle Network in the Study Area (South)



3.4.3 Environmental Consequences

Assessment Method

Overview of Assessment

The following conditions were evaluated to identify potential transportation impacts of the proposed action:

- 2020 Existing Condition
- 2025 No Action Condition
- 2025 Proposed Action Condition
- 2040 No Action Condition
- 2040 Proposed Action Condition

The 2020 Existing Condition was analyzed to describe the current conditions in 2020. The 2025 Proposed Action Condition is anticipated to include completion of the VBA outreach office, NCA office, CMO, OPC building, and the first phase of the NCA cemetery, which would encompass 80 acres of land. The 2040 Proposed Action Condition is anticipated to include the same facilities as 2025, plus one additional phase of the NCA cemetery expansion, for a total of 112 acres of cemetery land.

Intersection LOS

No Action and Proposed Action conditions intersection operations were analyzed for 2025 and 2040 at the study intersections. Identical to the assessment of the 2020 Existing Condition, intersection operations in 2025 and 2040 were evaluated for the AM, PM, and Saturday peak hours. LOS analysis was conducted according to procedures outlined in the 2010 *Highway Capacity Manual* using Synchro 10 traffic analysis software per City and County standards. As discussed in the *Affected Environment* section, LOS E or worse represents the unacceptable LOS in Alameda, and LOS F represents the unacceptable LOS in Oakland.

Roadway Segments

No Action and Proposed Action roadway segment operations were analyzed for 2025 and 2040 at CMP segments and additional selected arterial segments. Identical to the assessment of the 2020 Existing Condition, roadway segments were evaluated using v/c ratios to measure the roadway performance, where a v/c ratio of 1.0 or above represents failure or LOS F.

Transit

The Proposed Action will include a stop from AC Transit at the facility but will otherwise not change the transit operations and facilities from existing conditions. The new stop will cause minimal operational impacts to the bus service because the proposed facility is close to existing transit line. Thus, transit conditions were assessed by evaluating the impact of the Proposed Action on travel speed in 2025 and 2040 at five arterial segments in Alameda (Atlantic Avenue, Main Street, Webster Street, Park Street, and Otis Drive).

A decrease in travel speed by 10 percent or greater is considered a substantial impact for transit conditions.

Pedestrian

Pedestrian activities are anticipated to be minor in the Proposed Action vicinity, given its suburban characteristics and remote location. The Proposed Action is also expected to generate negligible pedestrian activities because of its unique land uses as a VA clinic and a national cemetery. Furthermore, the Proposed Action is not anticipated to directly change the existing intersection geometry and sidewalks or crosswalks in the vicinity from the No Action conditions. Thus, pedestrian conditions were assessed qualitatively.

Bicycle

Bicycle activities are anticipated to be minor in the Proposed Action vicinity, given its suburban characteristics and remote location. The Proposed Action is also expected to generate negligible pedestrian activities because of its unique land uses as a VA clinic and a national cemetery. Furthermore, the Proposed Action is not anticipated to directly change the existing intersection geometry and the existing bicycle network in the vicinity from the No Action conditions. The Proposed Action will include a bicycle path along the main roadway to the facility. Thus, bicycle conditions were assessed qualitatively.

Parking and Loading

There are no design changes for parking and loading conditions from the previous 2013 Alameda VA EA. Refer to the 2013 Alameda VA EA for details.

Vehicle Miles Traveled

VMT refers to a measure that represents the total amount of driving by a person (per capita or per employee), which helps evaluate the transportation system's impact on the climate, the environment, and human health. Policymakers are gradually replacing the traditional evaluation method of the transportation system's environmental impact using the automobile delay or LOS. In this analysis, the MTC Travel Model One was used to evaluate the VMT impacts of the Proposed Action. The existing MTC Travel Model One provides the transportation analysis zone (TAZ) VMT data for 2020, 2030, and 2040. Because the project is anticipated to open after 2025, the VMT analysis was conducted for 2030 and 2040. The Proposed Action's VMT generation is compared with those of the regional, Alameda, and TAZ 964's average development.

Proposed Action Travel Demand Analysis

Trip Generation

The Proposed Action trip generation was developed using specific information provided by the VA and by applying trip generation rates from the Institute of Transportation Engineers *Trip Generation Manual*, 10th edition. The VA provided the estimated number of clients, visitors, and employees for the OPC Clinic and the National Cemetery. Institute of Transportation Engineers trip generation rates were applied for additional office land uses in the Proposed Action.

The VHA estimated daily distribution tables of clinic employees and client trips, which is presented in Table 3-14. It is anticipated that almost half of the employees would enter the development between 7:00 AM and 8:00 AM, and leave between 4:00 PM and 5:00 PM daily. The client daily distribution is expected to be spread out, with entry trips peaking from 8:00 AM to 10:00 AM and exit trips peaking from 10:00 AM to 11:00 AM. The VHA hours were assumed to be Monday through Friday 8:00 AM to 6:00 PM and on Saturday from 8:00 AM to 1:00 PM. The number of trips is more conservative as there is additional availability for clients on Sundays.

Table 3-14. Daily Trip Distribution of Employees and Clients of the Proposed Action

Time	Employee		Client	
	In	Out	In	Out
6:00 AM	5%			
7:00 AM	45%		5%	
8:00 AM	10%		20%	
9:00 AM	5%		20%	10%
10:00 AM			10%	25%
11:00 AM			5%	20%
12:00 PM		20%		5%
1:00 PM	25%		5%	
2:00 PM	10%		10%	5%
3:00 PM		10%	10%	10%
4:00 PM		45%	10%	10%
5:00 PM		20%	5%	10%
6:00 PM		5%		5%
Total	100%	100%	100%	100%

Assumptions about the NCA cemetery were defined and developed based on information provided by VA. Assumptions incorporated in estimates include the following:

- Memorial or inurnment services would occur Monday through Friday between 9:00 AM and 3:00 PM. Cortege trips (group of vehicles) would occur only during the service time.
- Approximately six services would take place Monday through Friday, with up to 15 vehicles per service, lasting approximately 15 to 30 minutes.
- 270 weekday trips would be induced by corteges in the initial phase.
- Build out of the cemetery would occur in 10-year increments per phase for a total of 11 phases including phase 1 during opening; each phase would expand the cemetery to allow for the addition of 25,000 new niches per phase. The number of weekday trips induced by corteges would gradually increase in number under future expansion phases.

- Seven cemetery staff members would work in the OPC building Monday through Friday between 8:00 AM and 5:00 PM.
- One delivery would occur in the weekday AM peak hour and PM peak hour each.

Based on the information collected for the analysis in the 2013 Alameda VA EA, the person trips generated by the Proposed Actions in 2025 and 2040 were anticipated to travel in various modes, including automobiles (car, truck, and van), AC Transit, BART, bicycle, and walk. Based on more recent data collected by the VA for VA-provided medical services nationally, mode assumptions have been updated since the 2013 assessment to reflect changes in how services are being provided. Data have shown that approximately 20 percent of the total medical services provided at similar facilities are occurring on a virtual platform over the Internet because of the rapidly growing Telehealth Services. This assumption has been incorporated into the Proposed Action modeling for 2025 and 2040. Table 3-15 summarizes the 2025 and 2040 Proposed Action Condition mode split. Twenty percent of total clinic visits are anticipated to occur virtually through Telehealth Services. Although it is reasonable to assume that Telehealth Services could expand further from 2025 to 2040, to be more conservative, no increase in virtual services was assumed for modeling between 2025 and 2040. Eleven percent of the trips would be made by transit including AC Transit and BART, and would be supplemented by the new shuttle service that connects Oakland BART stations to the VA Transfer Parcel. Despite the use of Telehealth Services and transit service, it is still anticipated that 67 percent of the clinic trips would be made by automobiles given Alameda's auto-oriented and suburban characteristics.

Table 3-15. 2025 and 2040 Proposed Action Conditions Anticipated Mode Split

Mode	2025	2040
Car, truck, van (includes carpool)	67%	67%
Transit (AC Transit, BART)	11%	11%
Walk	2%	2%
Telehealth Service (Telemedicine)	20%	20%
Total	100%	100%

2025 PROPOSED ACTION CONDITION

It is anticipated that the 2025 Proposed Action Condition would include a completion of the OPC, related office facilities, and one phase of construction of the National Cemetery. Most trips from the Proposed Action are anticipated to occur outside of the traditional peak hours because of the unique characteristics of the Proposed Action as a clinic and a national cemetery. For example, cortege trips are generated only between 9:00 AM and 3:00 PM during inurnment services and, therefore, would not affect traditional commute peak hours. As a result, while 1,901 total weekday daily trips are anticipated, only 231 AM peak hour person trips, 230 PM peak hour person trips, and 185 Saturday peak hour person trips are anticipated in 2025. Table 3-16 summarizes the 2025 Proposed Action Condition estimated daily person trip generation. This calculation does not take into account those trips related to Telehealth Services or non-auto modes

of transportation, so this would be total trips before taking into account the mode of travel for scheduled services.

Daily distribution of trips and mode split were applied to the daily employee and client trip generation to calculate peak hour trip generation by mode in the 2025 Proposed Action Condition, as summarized in Table 3-17. A vehicle occupancy rate of 1.08, which is consistent with the rate used in 2013 VA EA, was applied to all person trips. After removal of non-auto modes of transportation and application of the occupancy ratio, modeling results show the Proposed Action is anticipated to generate 144 AM peak hour vehicle trips, 144 PM peak hour vehicle trips, and 116 Saturday peak hour vehicle trips.

Table 3-16. 2025 Proposed Action Condition Estimated Daily Person Trip Generation

Land Use	Quantity	Units	Weekday Daily	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
Office	5.0	TSF ^a	53	5	1	6	1	5	6	0	0	0
Clinic	513	Clients	1,026	103	0	103	51	51	102	26	103	129
	242	Employees	484	109	0	109	0	109	109	0	48	48
Cemetery												
Employees	7	Employees	14	7	0	7	0	7	7	0	0	0
Visitors			50	2	2	4	2	2	4	4	4	8
Corteges			270	0	0	0	0	0	0	0	0	0
Deliveries			4	1	1	2	1	1	2	0	0	0
Total			1,901	227	4	231	55	175	230	30	155	185

^a thousand square feet

Table 3-17. 2025 Proposed Action Condition Estimated Peak Hour Trip Generation by Mode

Direction	Person Trips					Vehicle Trips
	Auto	Transit	Bike/Walk	Telehealth	Total	
Weekday AM Peak Hour						
Inbound	152	25	5	45	227	141
Outbound	3	0	0	1	4	3
Total	155	25	5	46	231	144
Weekday PM Peak Hour						
Inbound	37	6	1	11	55	35
Outbound	117	19	4	35	175	109
Total	154	25	5	46	230	144
Saturday Peak Hour						
Inbound	20	3	1	6	30	19
Outbound	104	17	3	31	155	97
Total	124	20	4	37	185	116

2040 PROPOSED ACTION CONDITION

It is anticipated that the 2040 Proposed Action Condition would include the same facilities as the 2025 Proposed Action Condition plus a second phase expansion of the National Cemetery. Identical to the 2025 Proposed Action Condition, most trips from the Proposed Action are anticipated to occur outside of the traditional peak hours, given the unique characteristics of the Proposed Action as a clinic and a national cemetery. The Proposed Action would generate 231 AM peak hour person trips, 230 PM peak hour person trips, and 185 Saturday peak hour person trips in the 2040 Proposed Action Condition. Table 3-18 summarizes the 2040 Proposed Action Condition estimated daily person trip generation.

Daily distribution of trips and mode split were applied to the daily employee and client trip generation to calculate the peak hour trip generation by mode in 2040 Proposed Action Condition, as summarized in Table 3-19. Identical to the calculation method in the 2025 Proposed Action Condition, a standard vehicle occupancy rate of 1.08 was applied to all person trips. After removal of non-auto modes of transportation and application of the occupancy ratio, modeling results show the Proposed Action is anticipated to generate 144 AM peak hour vehicle trips, 144 PM peak hour vehicle trips, and 116 Saturday peak hour vehicle trips.

Table 3-18. 2040 Proposed Action Condition Estimated Daily Person Trip Generation

Land Use	Quantity	Units	Weekday Daily	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
Office	5.0	TSF ^a	53	5	1	6	1	5	6	0	0	0
Clinic	513	Clients	1,026	103	0	103	51	51	102	26	103	129
	242	Employees	484	109	0	109	0	109	109	0	48	48
<i>Cemetery</i>												
Employees	7	Employees	14	7	0	7	0	7	7	0	0	0
Visitors			55	2	2	4	2	2	4	4	4	8
Corteges			297	0	0	0	0	0	0	0	0	0
Deliveries			4	1	1	2	1	1	2	0	0	0
Total			1,933	227	4	231	55	175	230	30	155	185

^a thousand square feet

Table 3-19. 2040 Proposed Action Condition Estimated Peak Hour Trip Generation by Mode

Direction	Person Trips					Vehicle Trips
	Auto	Transit	Bike/Walk	Telehealth	Total	
Weekday AM Peak Hour						
Inbound	152	25	5	45	227	141
Outbound	3	0	0	1	4	3
Total	155	25	5	46	231	144
Weekday PM Peak Hour						
Inbound	37	6	1	11	55	35
Outbound	117	19	4	35	175	109
Total	154	25	5	46	230	144
Saturday Peak Hour						
Inbound	20	3	1	6	30	19
Outbound	104	17	3	31	155	97
Total	124	20	4	37	185	116

Trip Distribution

Trip distribution identifies the travel patterns of the trips generated to and from the VA Transfer Parcel. Trip distribution percentages are calculated using 2017 and 2018 ZIP Code information of employees and clients of the existing Oakland OPC and Behavioral Health Clinic. For this study, it was assumed that all employees and clients using the existing facilities in Oakland would transfer to and use the proposed new development at the VA Transfer Parcel.

Table 3-20 presents the trip distribution for employees and clients to the VA Transfer parcel. Approximately 92 percent of employees would need to travel through the Webster/Posey Tube from Oakland (four rows shown in bold font), and 8 percent would need to travel across Alameda Island. Approximately 79 percent of the clients would need to travel through the Webster/Posey Tube from Oakland (four rows shown in bold font), and 21 percent would need to travel across Alameda Island. The same trip distribution percentage is assumed for both the 2025 Proposed Action Condition and 2040 Proposed Action Condition.

Table 3-20. 2025 and 2040 Proposed Action Conditions Estimated Employees and Client Trip Distribution

From	Employee Percentage	Client Percentage
I-880 North	34%	13%
I-880 South through Tubes	16%	12%
I-980	36%	34%
Downtown Oakland	6%	20%

From	Employee Percentage	Client Percentage
I-880S through Downtown Alameda	6%	10%
Downtown Alameda	2%	11%
Total	100%	100%

2025 PROPOSED ACTION CONDITION

Table 3-21 summarizes the number of vehicle trips to and from the VA Transfer Parcel by employees and clients in the 2025 Proposed Action Condition. Visitors to the cemetery are assumed to exhibit the same travel pattern as employees because of their travel characteristics to the VA Transfer Parcel. Thus, visitor vehicle trip counts were added to the employee vehicle trip counts and distributed to the same routes.

Table 3-21. 2025 Proposed Action Condition Estimated Peak Hour Vehicle Trips of Employees and Clients

Direction	Employees	Clients
Weekday AM Peak Hour		
Inbound	77	64
Outbound	3	0
Total	80	64
Weekday PM Peak Hour		
Inbound	3	32
Outbound	77	32
Total	80	64
Saturday Peak Hour		
Inbound	3	16
Outbound	33	64
Total	36	80

2040 PROPOSED ACTION CONDITION

Table 3-22 summarizes the number of vehicle trips to and from the VA Transfer Parcel by employees and clients in the 2040 Proposed Action Condition. Consistent with the 2025 Proposed Action Condition, the cemetery visitor vehicle trips were added to the employee vehicle trip counts and distributed to the same routes.

Table 3-22. 2040 Proposed Action Condition Estimated Peak Hour Vehicle Trips of Employees and Clients

Direction	Employees	Clients
<i>Weekday AM Peak Hour</i>		
Inbound	77	64
Outbound	3	0
Total	80	64
<i>Weekday PM Peak Hour</i>		
Inbound	3	32
Outbound	77	32
Total	80	64
<i>Saturday Peak Hour</i>		
Inbound	3	16
Outbound	33	64
Total	36	80

Trip Assignment

Preferred routes to and from the VA Transfer Parcel were determined, and the number of vehicle trips using each preferred route were assigned, based on the trip generation and trip distribution. See Appendix D for the trip assignment results for the 2025 Proposed Action Condition and 2040 Proposed Action Condition.

2025 No Action and 2025 Proposed Action Conditions Operations

The annual volume growth rate for each intersection was derived by comparing the 2020 and 2040 ACTD Model estimates. This volume growth process included collecting existing segment volumes at all segments surrounding the study intersections, calculating intersection-specific volumes for 2020 and 2040 using the ACTD Model estimates, then deriving the annual growth rate for each intersection using this information. The derived annual growth rates were then applied to 2020 Existing Condition volumes at each of the 26 study intersections to develop the 2025 No Action Condition. Subsequently, the 2025 Proposed Action Condition was developed by adding modeled vehicle trips generated by the Proposed Action to the 2025 No Action Condition volumes. The 2025 No Action Condition and 2025 Proposed Action Condition volumes at study intersections are available in Appendix D.

Intersection LOS

Table 3-23 summarizes and compares the intersection LOS results in the 2025 No Action Condition with the 2025 Proposed Action Condition during the AM, PM, and Saturday peak hours. All intersections operate at an acceptable LOS under the 2025 No Action Condition, except for the following three:

- Fruitvale Avenue and 9th Street Intersection (#14) – This intersection operates at LOS F during the PM peak hour.
- Tilden Way and Fernside Avenue Intersection (#21) – This intersection operates at LOS F during the PM peak hour.
- Broadway and Otis Drive (#23) – This intersection operates at LOS E during the PM peak hour.

In the 2025 Proposed Action Condition, there would be no degradation of intersections to an unacceptable LOS. However, the same three intersections would continue to operate at an unacceptable LOS, and the Proposed Action inflicted volume increases were further assessed to evaluate the impact:

- Fruitvale Avenue and 9th Street Intersection (#14) – This intersection continues to operate at LOS F during the PM peak hour. Volume increase of <0.01 percent is anticipated and would not exceed the 3 percent threshold of significance.
- Tilden Way and Fernside Avenue Intersection (#21) – This intersection continues to operate at LOS F during the PM peak hour. Volume increase of 0.11 percent is anticipated and would not exceed the 3 percent threshold of significance.
- Broadway and Otis Drive (#23) – This intersection continues to operate at LOS E during the PM peak hour. Volume increase of 0.13 percent is anticipated and would not exceed the 3 percent threshold of significance.

Because a volume increase of 3 percent or higher would not occur with implementation of the Proposed Action at the three intersections operating at an unacceptable LOS under the No Action condition, the traffic impact in 2025 would not be substantial.

Table 3-23. 2025 No Action and 2025 Proposed Action Conditions LOS Results Comparison

Intersection		Peak Hour	2025 No Action		2025 Proposed Action		Delay Diff.	Volume Diff.
No.	Location		Delay (s)	LOS	Delay (s)	LOS		
1	Webster Street and 8th Street (O)	Weekday AM	19.0	B	19.1	B	0.1	0.78%
		Weekday PM	20.6	C	20.6	C	0.0	0.29%
		Saturday	19.4	B	19.4	B	0.0	0.23%
2	Webster Street and 7th Street (O)	Weekday AM	12.4	B	12.5	B	0.1	1.07%
		Weekday PM	21.4	C	21.6	C	0.2	0.18%
		Saturday	11.7	B	11.7	B	0.0	0.10%
3	Harrison Street and 7th Street (O)	Weekday AM	18.2	B	18.4	B	0.2	0.09%
		Weekday PM	51.4	D	64.9	E	13.5	2.80%
		Saturday	26.2	C	34.8	C	8.6	2.61%
4	Broadway and 6th Street (O)	Weekday AM	14.7	B	15.1	B	0.4	1.72%
		Weekday PM	20.0	B	20.1	C	0.1	0.35%
		Saturday	9.5	A	9.6	A	0.1	0.28%

**Table 3-23. 2025 No Action and 2025 Proposed Action Conditions LOS
Results Comparison**

Intersection		Peak Hour	2025 No Action		2025 Proposed Action		Delay Diff.	Volume Diff.
No.	Location		Delay (s)	LOS	Delay (s)	LOS		
5	Broadway and 5th Street (O)	Weekday AM	36.9	D	48.4	D	11.5	4.69%
		Weekday PM	47.4	D	48.0	D	0.6	0.72%
		Saturday	17.2	B	17.3	B	0.1	0.67%
6	Jackson Street and 6th Street (O)	Weekday AM	25.5	C	25.7	C	0.2	0.46%
		Weekday PM	15.4	B	16.4	B	1.0	2.90%
		Saturday	10.2	B	11.0	B	0.8	2.38%
7	Jackson Street and 5th Street (O)	Weekday AM	14.6	B	14.7	B	0.1	0.58%
		Weekday PM	20.3	C	20.6	C	0.3	0.23%
		Saturday	14.6	B	14.8	B	0.2	0.30%
8	Webster Street and Willie Stargell Avenue (A)	Weekday AM	11.9	B	11.7	B	-0.2	4.40%
		Weekday PM	13.9	B	14.5	B	0.6	3.62%
		Saturday	8.0	A	8.9	A	0.9	3.79%
9	Main Street and Willie Stargell Avenue (A)	Weekday AM	9.9	A	9.2	A	-0.7	15.40%
		Weekday PM	9.5	A	9.3	A	-0.2	13.87%
		Saturday	7.1	A	7.0	A	-0.1	13.78%
10	Main Street and Atlantic Avenue (A)	Weekday AM	15.1	B	15.2	B	0.1	1.73%
		Weekday PM	17.8	B	17.9	B	0.1	1.85%
		Saturday	17.4	B	17.6	B	0.2	1.28%
11	Webster Street and Atlantic Avenue (A)	Weekday AM	29.4	C	29.4	C	0.0	0.07%
		Weekday PM	28.1	C	28.2	C	0.1	0.06%
		Saturday	30.4	C	30.4	C	0.0	0.07%
12	23rd Avenue and Ford Street (O)	Weekday AM	4.5	A	4.5	A	0.0	0.10%
		Weekday PM	11.8	B	11.8	B	0.0	0.03%
		Saturday	6.3	A	6.3	A	0.0	0.00%
13	29th Avenue and Ford Street (O)	Weekday AM	21.0	C	21.0	C	0.0	0.10%
		Weekday PM	22.7	C	22.7	C	0.0	0.13%
		Saturday	20.5	C	20.6	C	0.1	0.16%
14	Fruitvale Avenue and East 9th Street (O)	Weekday AM	70.6	E	70.6	E	0.0	0.00%
		Weekday PM	81.0	F	81.0	F	0.0	0.00%
		Saturday	28.9	C	28.9	C	0.0	0.00%
15		Weekday AM	13.0	B	13.0	B	0.0	0.00%
		Weekday PM	17.3	B	17.3	B	0.0	0.00%

Table 3-23. 2025 No Action and 2025 Proposed Action Conditions LOS Results Comparison

Intersection		Peak Hour	2025 No Action		2025 Proposed Action		Delay Diff.	Volume Diff.
No.	Location		Delay (s)	LOS	Delay (s)	LOS		
	Fruitvale Avenue and East 8th Street (O)	Saturday	12.7	B	12.7	B	0.0	0.00%
16	High Street and Coliseum Way (O)	Weekday AM	49.7	D	49.7	D	0.0	0.12%
		Weekday PM	71.8	E	71.9	E	0.1	0.03%
		Saturday	35.1	D	35.1	D	0.0	0.00%
17	High Street and Oakport Street (O)	Weekday AM	23.3	C	23.3	C	0.0	0.10%
		Weekday PM	39.6	D	39.8	D	0.2	0.10%
		Saturday	23.4	C	23.4	C	0.0	0.12%
18	Park Street and Blanding Avenue (A)	Weekday AM	17.5	B	17.5	B	0.0	0.10%
		Weekday PM	16.5	B	16.5	B	0.0	0.09%
		Saturday	12.4	B	12.4	B	0.0	0.11%
19	Park Street and Lincoln Avenue (A)	Weekday AM	18.2	B	18.3	B	0.1	0.29%
		Weekday PM	23.0	C	23.0	C	0.0	0.24%
		Saturday	17.4	B	17.4	B	0.0	0.30%
20	Park Street and Encinal Avenue (A)	Weekday AM	24.5	C	24.7	C	0.2	0.29%
		Weekday PM	23.1	C	23.1	C	0.0	0.19%
		Saturday	20.1	C	20.1	C	0.0	0.30%
21	Tilden Way and Fernside Boulevard (A)	Weekday AM	32.4	C	32.6	C	0.2	0.12%
		Weekday PM	80.6	F	80.6	F	0.0	0.11%
		Saturday	45.4	D	45.4	D	0.0	0.14%
22	Broadway and Encinal Avenue (A)	Weekday AM	14.9	B	14.9	B	0.0	0.25%
		Weekday PM	15.6	B	15.6	B	0.0	0.19%
		Saturday	12.9	B	12.9	B	0.0	0.30%
23	Broadway and Otis Drive (A)	Weekday AM	35.9	D	35.9	D	0.0	0.16%
		Weekday PM	55.4	E	55.9	E	0.5	0.13%
		Saturday	29.5	C	29.6	C	0.1	0.20%
24	High Street and Fernside Boulevard (A)	Weekday AM	53.4	D	53.4	D	0.0	0.00%
		Weekday PM	38.3	D	38.3	D	0.0	0.10%
		Saturday	32.9	C	32.9	C	0.0	0.18%
25	Otis Drive and Fernside Boulevard (A)	Weekday AM	50.3	D	50.5	D	0.2	0.10%
		Weekday PM	29.2	C	29.2	C	0.0	0.09%
		Saturday	22.0	C	22.1	C	0.1	0.14%

Table 3-23. 2025 No Action and 2025 Proposed Action Conditions LOS Results Comparison

Intersection		Peak Hour	2025 No Action		2025 Proposed Action		Delay Diff.	Volume Diff.
No.	Location		Delay (s)	LOS	Delay (s)	LOS		
26	Island Drive and Doolittle Drive (A)	Weekday AM	43.4	D	43.5	D	0.1	0.10%
		Weekday PM	23.2	C	23.2	C	0.0	0.09%
		Saturday	16.5	B	16.6	B	0.1	0.14%

Notes: (A) = Alameda, (O) = Oakland

Roadway Segments

Table 3-24 and Table 3-25 summarize the comparison of 2025 No Action Condition and 2025 Proposed Action Condition for each of arterial segment and freeway segment operations conditions during the PM peak hour. All roadway segments operate with v/c ratio below 1.00 in the 2025 No Action condition with the following exceptions:

- SR-61 (Doolittle Drive) segment from Oakland City Limit to Fernside Boulevard (#1) – This arterial segment operates at v/c ratio of 1.00 or higher in both directions.

In the 2025 Proposed Action Condition, all segments that were operating at v/c ratio of 1.00 or lower would continue to operate at v/c ratio of 1.00 or lower; thus, no segment would be degraded to LOS F. However, the SR 61 (Doolittle Drive) segment from Oakland City Limit to Fernside Boulevard would continue to operate at a greater than 1.00 v/c ratio; therefore, the percent increase in v/c ratio caused by the Proposed Action is further assessed to evaluate the impact. Modeling results show that the SR 61 (Doolittle Drive) segment from Oakland City Limit to Fernside Boulevard (#1) arterial segment would continue to operate at a v/c ratio greater than 1.00 in both directions. The v/c increase from implementation of the Proposed Action is anticipated to be less than 0.01 and would not exceed the 3 percent threshold of significance; therefore, the traffic impact in 2025 would not be substantial.

Table 3-24. 2025 No Action and 2025 Proposed Action Conditions PM Peak Hour CMP Arterial Segment v/c Comparison

No.	Roadway	No Action		Action		Difference	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	SR 61 (Doolittle Drive)	1.39	1.24	1.39	1.24	0.00	0.00
2	SR 61 (Otis Drive)	0.93	0.76	0.93	0.76	0.00	0.00
3	SR 61 (Broadway)	0.64	0.72	0.64	0.73	0.00	0.01
4	SR 61 (Encinal Avenue)	0.40	0.31	0.40	0.31	0.00	0.00
5	Posey/Webster Tubes	0.55	0.49	0.58	0.50	0.03	0.01
6	Atlantic Avenue	0.41	0.22	0.41	0.22	0.00	0.00
7	Park Street	0.76	0.60	0.76	0.60	0.00	0.00

No.	Roadway	No Action		Action		Difference	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
8	Park Street	0.37	0.34	0.37	0.34	0.00	0.00
9	Main Street	0.12	0.20	0.12	0.21	0.00	0.01
10	Webster Street	0.51	0.62	0.51	0.62	0.00	0.00
11	Webster Street		0.56		0.56		0.00
12	Harrison Street	0.36		0.36		0.00	
13	5th Street	0.49		0.49		0.00	
14	Broadway	0.15	0.40	0.15	0.41	0.00	0.01
15	Broadway	0.28		0.28		0.00	
16	7th Street	0.80		0.83		0.03	
17	Jackson Street	0.54	0.87	0.54	0.91	0.00	0.04

Notes: EB = eastbound, NB = northbound, SB = southbound, WB = westbound

Table 3-25. 2025 No Action and 2025 Proposed Action Conditions PM Peak Hour CMP Freeway Segment of I-880 v/c Comparison

Segment List	No Action		Action		Difference	
	NB	SB	NB	SB	NB	SB
West of I-980	0.73	0.73	0.73	0.73	0.00	0.00
East of Oak Street	0.81	0.72	0.81	0.73	0.00	0.01
West of Park Street	0.82	0.92	0.82	0.92	0.00	0.00
East of High Street	0.67	0.88	0.67	0.88	0.00	0.00

Notes: NB = northbound, SB = southbound

Transit

Table 3-26 summarizes the comparison of travel speed at five segments in Alameda under the 2025 No Action condition and 2025 Proposed Action condition. The Proposed Action is not anticipated to decrease the travel speed during the AM, PM, and Saturday peak hours by more than 0.2 percent, which is less than the 10 percent threshold of significance at all five segments. Thus, the Proposed Action will not have substantial impacts in 2025.

Table 3-26. 2025 No Action and 2025 Proposed Action Conditions Alameda Segment Speed Comparison

Segment	Peak Hour	2025 No Action		2025 Proposed Action		Difference	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Atlantic Avenue	Weekday AM	18.6	17.6	18.6	17.6	0.0%	0.0%
	Weekday PM	17.8	18.4	17.8	18.4	0.0%	0.0%
	Saturday	18.0	19.4	18.0	19.4	0.0%	0.0%

Segment	Peak Hour	2025 No Action		2025 Proposed Action		Difference	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Main Street	Weekday AM	18.9	15.8	18.7	15.7	-0.2%	-0.1%
	Weekday PM	19.4	15.8	19.3	15.6	-0.1%	-0.2%
	Saturday	19.7	16.0	19.6	15.8	-0.1%	-0.2%
Webster Street	Weekday AM	14.8	13.7	14.8	13.7	0.0%	0.0%
	Weekday PM	15.7	12.9	15.6	12.8	-0.1%	-0.1%
	Saturday	16.2	15.3	16.1	15.2	-0.1%	-0.1%
Park Street	Weekday AM	15.9	18.2	15.9	18.2	0.0%	0.0%
	Weekday PM	16.3	17.2	16.3	17.2	0.0%	0.0%
	Saturday	17.2	18.4	17.2	18.3	0.0%	-0.1%
Otis Drive	Weekday AM	12.2	16.4	12.1	16.4	-0.1%	0.0%
	Weekday PM	13.9	19.5	13.9	19.4	0.0%	-0.1%
	Saturday	15.5	21.1	15.5	21.1	0.0%	0.0%

Pedestrian

Minimal pedestrian activities are expected in the VA Transfer Parcel vicinity because of its suburban characteristics and remote location. The Proposed Action is anticipated to generate minor pedestrian activities, given its unique land uses as a VA clinic and a National Cemetery. Furthermore, changes to intersection geometry and sidewalks at the study intersections are not anticipated to occur as a result of implementation of the Proposed Action in 2025. Thus, the Proposed Action has no substantial impact on pedestrian activities.

Bicycle

Minimal bicycle activities are expected in the VA Transfer Parcel vicinity because of its suburban characteristics and remote location. The Proposed Action is anticipated to generate minor bicycle activities, given its unique land uses as a VA clinic and a national cemetery. Furthermore, changes to intersection geometry or the existing bicycle network at the study intersections are not anticipated to occur as a result of implementation of the Proposed Action in 2025. Thus, the Proposed Action has no substantial impact on bicycle activities.

Parking and Loading

There are no design changes for parking and loading conditions from the previous 2013 Alameda VA EA. The Proposed Action will not have any substantial impacts on parking and loading conditions in 2025.

Mitigations Measures

The Proposed Action will not result in any substantial impacts and no mitigations are required.

2040 No Action and 2040 Proposed Action Conditions Operations

Intersection LOS

Table 3-27 summarizes and compares the intersection LOS results under the 2040 No Action Condition to those under the 2040 Proposed Action Condition during the AM, PM, and Saturday peak hours. All intersections would operate at an acceptable LOS under the 2040 No Action Condition, except for the following intersections:

- Harrison Street and 7th Street (#3) – This intersection operates at LOS F during the PM peak hour.
- Jackson Street and 5th Street (#7) – This intersection operates at LOS F during the PM peak hour.
- Main Street and Atlantic Avenue (#10) – This intersection operates at LOS F during the Saturday peak hour.
- Webster Street and Atlantic Avenue (#11) – This intersection operates at LOS E during the PM peak hour.
- Fruitvale Avenue and 9th Street Intersection (#14) – This intersection operates at LOS F during the AM and PM peak hours.
- High Street and Coliseum Way (#16) – This intersection operates at LOS F during the PM peak hour.
- Tilden Way and Fernside Avenue Intersection (#21) – This intersection operates at LOS F during the PM peak hour and operates at LOS E during the Saturday peak hour.
- Broadway and Otis Drive (#23) – This intersection operates at LOS F during the PM peak hour.
- Broadway and Otis Drive (#24) – This intersection operates at LOS F during the AM peak hour.
- High Street and Fernside Boulevard (#25) – This intersection operates at LOS F during the AM peak hour.
- Otis Drive and Fernside Boulevard (#26) – This intersection operates at LOS F during the AM peak hour.

Under the 2040 Proposed Action Condition, there would be no degradation of intersections to an unacceptable LOS. However, those intersections listed above would continue to operate at an unacceptable LOS. Therefore, volume increases realized from implementation of the Proposed Action were assessed to further evaluate the impact and to determine whether any intersections were degraded by more than 3 percent. The results are as follows:

- Harrison Street and 7th Street (#3) – Under the No Action Condition, this intersection operates at LOS F during the PM peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 2.53 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.

- Jackson Street and 5th Street (#7) – Under the No Action Condition, this intersection operates at LOS F during the PM peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.17 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.
- Main Street and Atlantic Avenue (#10) – Under the No Action Condition, this intersection operates at LOS F during the Saturday peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.54 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.
- Webster Street and Atlantic Avenue (#11) – Under the No Action Condition, this intersection operates at LOS E during the PM peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.05 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.
- Fruitvale Avenue and 9th Street Intersection (#14) – Under the No Action Condition, this intersection operates at LOS F during the AM and PM peak hours. Implementation of the Proposed Action would not be anticipated to change traffic volumes (0 percent change) in both the AM and PM peak hours; therefore, the percent change does not exceed the 3 percent threshold of significance.
- High Street and Coliseum Way (#16) – Under the No Action Condition, this intersection operates at LOS F during the PM peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.03 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.
- Tilden Way and Fernside Avenue Intersection (#21) – Under the No Action Condition, this intersection operates at LOS F during the PM peak hour and operates at LOS E during the Saturday peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.09 percent during the PM peak hour and 0.11 percent in Saturday peak hour; therefore, the percent change does not exceed the 3 percent threshold of significance.
- Broadway and Otis Drive (#23) – Under the No Action Condition, this intersection operates at LOS F during the PM peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.11 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.
- Broadway and Otis Drive (#24) – Under the No Action Condition, this intersection operates at LOS F during the AM peak hour. Implementation of the Proposed Action would not be anticipated to change traffic volumes (0 percent change); therefore, the percent change does not exceed the 3 percent threshold of significance.
- High Street and Fernside Boulevard (#25) – Under the No Action Condition, this intersection operates at LOS F during the AM peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.09 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.

- Otis Drive and Fernside Boulevard (#26) – Under the No Action Condition, this intersection operates at LOS F during the AM peak hour. Implementation of the Proposed Action would be anticipated to increase traffic volumes by 0.09 percent; therefore, the percent change does not exceed the 3 percent threshold of significance.

Since a volume increase of 3 percent or greater would not result from implementation of the Proposed Action Condition at any of the study intersections that were operating at an unacceptable LOS E or worse in Alameda and LOS F in Oakland under the No Action Condition, traffic volume impacts in 2040 would not be considered substantial.

Table 3-27. 2040 No Action and 2040 Proposed Action Conditions LOS Results Comparison

Intersection		Peak Hour	2040 No Action		2040 Proposed Action		Delay Diff.	Volume Diff.
No.	Location		Delay (s)	LOS	Delay (s)	LOS		
1	Webster Street and 8th Street (O)	Weekday AM	19.7	B	19.8	B	0.1	0.67%
		Weekday PM	21.5	C	21.6	C	0.1	0.25%
		Saturday	19.8	B	19.8	B	0.0	0.20%
2	Webster Street and 7th Street (O)	Weekday AM	14.0	B	14.2	B	0.2	0.85%
		Weekday PM	33.7	C	34.5	C	0.8	0.17%
		Saturday	12.5	B	12.6	B	0.1	0.09%
3	Harrison Street and 7th Street (O)	Weekday AM	31.0	C	31.4	C	0.4	0.09%
		Weekday PM	82.3	F	96.7	F	14.4	2.53%
		Saturday	54.2	D	65.6	E	11.4	2.35%
4	Broadway and 6th Street (O)	Weekday AM	14.6	B	15.1	B	0.5	1.71%
		Weekday PM	19.5	B	19.6	B	0.1	0.36%
		Saturday	9.3	A	9.4	A	0.1	0.29%
5	Broadway and 5th Street (O)	Weekday AM	43.7	D	59.0	E	15.3	4.39%
		Weekday PM	47.0	D	47.6	D	0.6	0.72%
		Saturday	17.1	B	17.3	B	0.2	0.67%
6	Jackson Street and 6th Street (O)	Weekday AM	32.0	C	32.3	C	0.3	0.44%
		Weekday PM	16.2	B	17.3	B	1.1	2.86%
		Saturday	10.5	B	11.4	B	0.9	2.34%
7	Jackson Street and 5th Street (O)	Weekday AM	17.0	B	17.2	B	0.2	0.52%
		Weekday PM	88.1	F	92.8	F	4.7	0.17%
		Saturday	34.4	C	35.2	D	0.8	0.23%
8	Webster Street and Willie Stargell Avenue (A)	Weekday AM	12.7	B	12.5	B	-0.2	3.95%
		Weekday PM	15.2	B	15.6	B	0.4	3.33%
		Saturday	8.4	A	9.3	A	0.9	3.48%
9		Weekday AM	13.3	B	13.3	B	0.0	9.17%

**Table 3-27. 2040 No Action and 2040 Proposed Action Conditions LOS
Results Comparison**

Intersection		Peak Hour	2040 No Action		2040 Proposed Action		Delay Diff.	Volume Diff.
No.	Location		Delay (s)	LOS	Delay (s)	LOS		
	Main Street and Willie Stargell Avenue (A)	Weekday PM	13.0	B	14.2	B	1.2	7.86%
		Saturday	8.7	A	9.2	A	0.5	7.79%
10	Main Street and Atlantic Avenue (A)	Weekday AM	35.1	D	36.1	D	1.0	0.78%
		Weekday PM	42.5	D	42.7	D	0.2	0.79%
		Saturday	87.3	F	87.5	F	0.2	0.54%
11	Webster Street and Atlantic Avenue (A)	Weekday AM	33.9	C	34.0	C	0.1	0.06%
		Weekday PM	55.2	E	55.3	E	0.1	0.05%
		Saturday	43.1	D	43.1	D	0.0	0.05%
12	23rd Avenue and Ford Street (O)	Weekday AM	5.4	A	5.5	A	0.1	0.08%
		Weekday PM	28.6	C	28.6	C	0.0	0.02%
		Saturday	11.2	B	11.2	B	0.0	0.00%
13	29th Avenue and Ford Street (O)	Weekday AM	44.2	D	44.3	D	0.1	0.08%
		Weekday PM	23.3	C	23.5	C	0.2	0.10%
		Saturday	24.0	C	24.0	C	0.0	0.13%
14	Fruitvale Avenue and East 9th Street (O)	Weekday AM	98.4	F	98.4	F	0.0	0.00%
		Weekday PM	91.7	F	91.7	F	0.0	0.00%
		Saturday	32.8	C	32.8	C	0.0	0.00%
15	Fruitvale Avenue and East 8th Street (O)	Weekday AM	14.6	B	14.6	B	0.0	0.00%
		Weekday PM	18.4	B	18.4	B	0.0	0.00%
		Saturday	13.4	B	13.4	B	0.0	0.00%
16	High Street and Coliseum Way (O)	Weekday AM	69.1	E	69.1	E	0.0	0.10%
		Weekday PM	101.3	F	101.5	F	0.2	0.03%
		Saturday	42.9	D	42.9	D	0.0	0.00%
17	High Street and Oakport Street (O)	Weekday AM	27.2	C	27.2	C	0.0	0.09%
		Weekday PM	60.1	E	60.2	E	0.1	0.09%
		Saturday	28.0	C	28.1	C	0.1	0.11%
18	Park Street and Blanding Avenue (A)	Weekday AM	25.0	C	25.0	C	0.0	0.08%
		Weekday PM	39.0	D	39.3	D	0.3	0.07%
		Saturday	16.0	B	16.0	B	0.0	0.09%
19	Park Street and Lincoln Avenue (A)	Weekday AM	18.9	B	18.9	B	0.0	0.27%
		Weekday PM	34.1	C	34.5	C	0.4	0.21%
		Saturday	20.3	C	20.4	C	0.1	0.26%

Table 3-27. 2040 No Action and 2040 Proposed Action Conditions LOS Results Comparison

Intersection		Peak Hour	2040 No Action		2040 Proposed Action		Delay Diff.	Volume Diff.
No.	Location		Delay (s)	LOS	Delay (s)	LOS		
20	Park Street and Encinal Avenue (A)	Weekday AM	24.9	C	25.2	C	0.3	0.28%
		Weekday PM	25.5	C	25.6	C	0.1	0.17%
		Saturday	21.1	C	21.1	C	0.0	0.26%
21	Tilden Way and Fernside Boulevard (A)	Weekday AM	46.4	D	46.7	D	0.3	0.10%
		Weekday PM	145.7	F	145.7	F	0.0	0.09%
		Saturday	77.7	E	77.6	E	-0.1	0.11%
22	Broadway and Encinal Avenue (A)	Weekday AM	15.2	B	15.2	B	0.0	0.25%
		Weekday PM	16.1	B	16.1	B	0.0	0.19%
		Saturday	13.2	B	13.2	B	0.0	0.29%
23	Broadway and Otis Drive (A)	Weekday AM	55.0	D	55.0	D	0.0	0.15%
		Weekday PM	86.6	F	87.3	F	0.7	0.11%
		Saturday	41.1	D	41.7	D	0.6	0.18%
24	High Street and Fernside Boulevard (A)	Weekday AM	83.8	F	83.7	F	-0.1	0.00%
		Weekday PM	40.7	D	40.7	D	0.0	0.09%
		Saturday	35.0	C	35.0	C	0.0	0.17%
25	Otis Drive and Fernside Boulevard (A)	Weekday AM	92.6	F	93.2	F	0.6	0.09%
		Weekday PM	31.2	C	31.2	C	0.0	0.09%
		Saturday	22.5	C	22.5	C	0.0	0.14%
26	Island Drive and Doolittle Drive (A)	Weekday AM	80.2	F	80.2	F	0.0	0.09%
		Weekday PM	23.8	C	23.8	C	0.0	0.09%
		Saturday	16.7	B	16.7	B	0.0	0.14%

Notes: (A) = Alameda, (O) = Oakland

Roadway Segments

Table 3-28 and Table 3-29 summarize comparisons of arterial segment and freeway segment operations under the 2040 No Action Condition and 2040 Proposed Action Condition during the PM peak hour. All roadway segments operate with a v/c ratio below 1.00 in the 2040 No Action condition except for the SR 61 (Doolittle Drive) segment from Oakland City Limit to Fernside Boulevard (#1). This arterial segment operates at a v/c ratio of 1.00 or higher in both directions.

Under the 2040 Proposed Action Condition, all segments that were operating at v/c ratio of 1.00 or lower under the No Action Condition would continue to operate at v/c ratio of 1.00 or lower; thus, there would be no segment degradation to LOS F from implementation of the Proposed Action. However, the SR 61 segment would continue to operate at a v/c ratio greater than 1.00; therefore, the v/c increase caused by the

Proposed Action has been assessed to further evaluate the impact. The results show that the v/c ratio for arterial segment SR 61 (Doolittle Drive) from Oakland City Limit to Fernside Boulevard (#1) is anticipated to increase by less than 0.01; therefore, the change would not exceed the v/c significance threshold of 3 percent and the traffic impact in 2040 would not be considered substantial.

Table 3-28. 2040 No Action and 2040 Proposed Action Conditions PM Peak Hour CMP Arterial Segment v/c Comparison

No.	Roadway	No Action		Action		Difference	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	SR 61 (Doolittle Drive)	1.40	1.27	1.40	1.27	0.00	0.00
2	SR 61 (Otis Drive)	0.94	0.86	0.95	0.87	0.01	0.01
3	SR 61 (Broadway)	0.66	0.83	0.66	0.83	0.00	0.00
4	SR 61 (Encinal Avenue)	0.41	0.35	0.41	0.35	0.00	0.00
5	Posey/Webster Tubes	0.61	0.53	0.64	0.54	0.03	0.01
6	Atlantic Avenue	0.50	0.51	0.50	0.51	0.00	0.00
7	Park Street	0.94	0.69	0.94	0.69	0.00	0.00
8	Park Street	0.43	0.38	0.43	0.38	0.00	0.00
9	Main Street	0.21	0.47	0.21	0.48	0.00	0.01
10	Webster Street	0.56	0.75	0.56	0.75	0.00	0.00
11	Webster Street		0.60		0.60		0.00
12	Harrison Street	0.40		0.40		0.00	
13	5th Street	0.48		0.49		0.01	
14	Broadway	0.14	0.40	0.14	0.41	0.00	0.01
15	Broadway	0.28		0.28		0.00	
16	7th Street	0.89		0.92		0.03	
17	Jackson Street	0.55	0.88	0.55	0.93	0.00	0.05

Table 3-29. 2040 No Action and 2040 Proposed Action Conditions PM Peak Hour CMP Freeway Segment of I-880 v/c Comparison

Segment List	No Action		Action		Difference	
	NB	SB	NB	SB	NB	SB
West of I-980	0.77	0.80	0.77	0.80	0.00	0.00
East of Oak Street	0.85	0.75	0.85	0.76	0.00	0.01
West of Park Street	0.88	0.96	0.88	0.96	0.00	0.00
East of High Street	0.71	0.93	0.71	0.93	0.00	0.00

Transit

Table 3-30 summarizes the comparison of travel speeds at five segments in Alameda under the 2040 No Action and 2040 Proposed Action conditions. The Proposed Action is not anticipated to decrease the travel speed for transit at any of the five segments during the AM, PM, or Saturday peak hours by more than 0.5 percent, which is less than the 10 percent threshold of significance. Thus, implementation of the Proposed Action will not have substantial impacts on transit service in 2040.

Table 3-30. 2040 No Action and 2040 Proposed Action Conditions Alameda Segment Speed Comparison

Segment	Peak Hour	2040 No Action		2040 Proposed Action		Difference	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Atlantic Avenue	Weekday AM	18.0	14.2	18.0	14.2	0.0%	0.0%
	Weekday PM	17.3	12.7	17.3	12.7	0.0%	0.0%
	Saturday	12.0	8.5	12.0	8.5	0.0%	0.0%
Main Street	Weekday AM	14.6	14.7	14.3	14.7	-0.3%	0.0%
	Weekday PM	17.5	13.9	17.4	13.4	-0.1%	-0.5%
	Saturday	17.3	14.7	17.3	14.4	0.0%	-0.3%
Webster Street	Weekday AM	13.8	13.4	13.8	13.4	0.0%	0.0%
	Weekday PM	14.9	7.7	14.8	7.6	-0.1%	-0.1%
	Saturday	14.9	13.8	14.8	13.7	-0.1%	-0.1%
Park Street	Weekday AM	15.0	18.1	15.0	18.1	0.0%	0.0%
	Weekday PM	15.2	15.0	15.1	14.9	-0.1%	-0.1%
	Saturday	16.6	17.7	16.6	17.7	0.0%	0.0%
Otis Drive	Weekday AM	8.6	12.3	8.6	12.3	0.0%	0.0%
	Weekday PM	13.6	19.4	13.6	19.3	0.0%	-0.1%
	Saturday	15.5	21.1	15.5	21.0	0.0%	-0.1%

Pedestrian

Minimal pedestrian activities are expected in the VA Transfer Parcel vicinity because of its suburban characteristics and remote location. The Proposed Action is anticipated to generate minor pedestrian activities, given its unique land uses as a VA clinic and a National Cemetery. Furthermore, intersection geometry and sidewalks at the study intersections are not anticipated to change as a result of implementation of the Proposed Action in 2040. Thus, the Proposed Action has no substantial impact on pedestrian activities.

Bicycle

Minimal bicycle activities are expected in the VA Transfer Parcel vicinity because of its suburban characteristics and remote location. The Proposed Action is anticipated to generate minor bicycle activities, given its unique land uses as a VA clinic and a National

Cemetery. Furthermore, intersection geometry or the existing bicycle network at the study intersections are not anticipated to change as a result of implementation of the Proposed Action in 2040. Thus, the Proposed Action has no substantial impact on bicycle activities.

Parking and Loading

There are no design changes for parking and loading conditions from the previous 2013 Alameda VA EA.

Mitigation Measures

The Proposed Action will not result in any substantial impacts and no mitigations are required.

Vehicle Miles Traveled Analysis

Table 3-31 summarizes the VMT comparison of the Proposed Action to TAZ 964, the City, and the region (Bay Area Counties) in 2030. TAZ refers to a basic spatial unit of traffic analysis that helps engineers and planners forecast changes in various measures, such as trip patterns, trip volumes, and modes. For any average development under TAZ 964, it is estimated that there would be 951 net trips, generating 27,531 net VMT. This equates to an average of 28.95 VMT per employee for an average development that could occur under current zoning. Further, for that same average development, it is estimated that those 951 net trips would each generate 23,965 and 20,351 net VMT in Alameda and the region, respectively. These each represent 87 and 74 percent net VMT, respectively, relative to the TAZ 964 estimate. In comparison, 951 net trips resulting from the Proposed Action would generate only 17,379 net VMT, which is equal to 18.30 VMT per employee and a 63 percent net VMT relative to TAZ 964. As summarized, results suggest that the Proposed Action would generate a lower VMT in comparison with the average development in TAZ 964 and would, therefore, reduce the city and regional VMT in 2030. See Appendix D for the detailed calculation of the VMT analysis results in 2030.

Table 3-32 summarizes the VMT comparison of the Proposed Action to TAZ 964, Alameda, and the region (Bay Area Counties) in 2040. It is estimated that there would be 967 net trips generating 24,661 net VMT if an average development was built in TAZ 964. Further, for the same average development, it is estimated that the 967 net trips would generate 23,015 and 20,017 net VMT in Alameda and the region, respectively. These each represent 93 and 81 percent net VMT, respectively, relative to TAZ 964. In comparison, 967 net trips resulting from the Proposed Action would generate 17,747 net VMT, which is a 72 percent net VMT relative to the TAZ 964. As summarized, results suggest that the Proposed Action would generate a lower VMT in comparison to the average development in TAZ 964 and would, therefore, reduce the city and regional VMT in 2040. See Appendix D for the detailed calculation of the VMT analysis results in 2040.

Table 3-31. Proposed Action VMT per Employee in Comparison with the TAZ 964, Alameda, and Regional VMT in 2030

Metric	TAZ 964	Alameda	Regional	Proposed Action
Net Trips	951	951	951	951
x Trip Length	28.95	25.20	21.40	18.30
Net VMT	27,531	23,965	20,351	17,379
% Typical in TAZ 964	100%	87%	74%	63%

Table 3-32. Proposed Action VMT per Employee in Comparison to the TAZ 964, Alameda, and Regional VMT in 2040

Metric	TAZ 964	Alameda	Regional	Proposed Action
Net Trips	967	967	967	967
x Trip Length	25.50	23.80	20.70	18.40
Net VMT	24,661	23,015	20,017	17,747
% Typical in TAZ 964	100%	93%	81%	72%

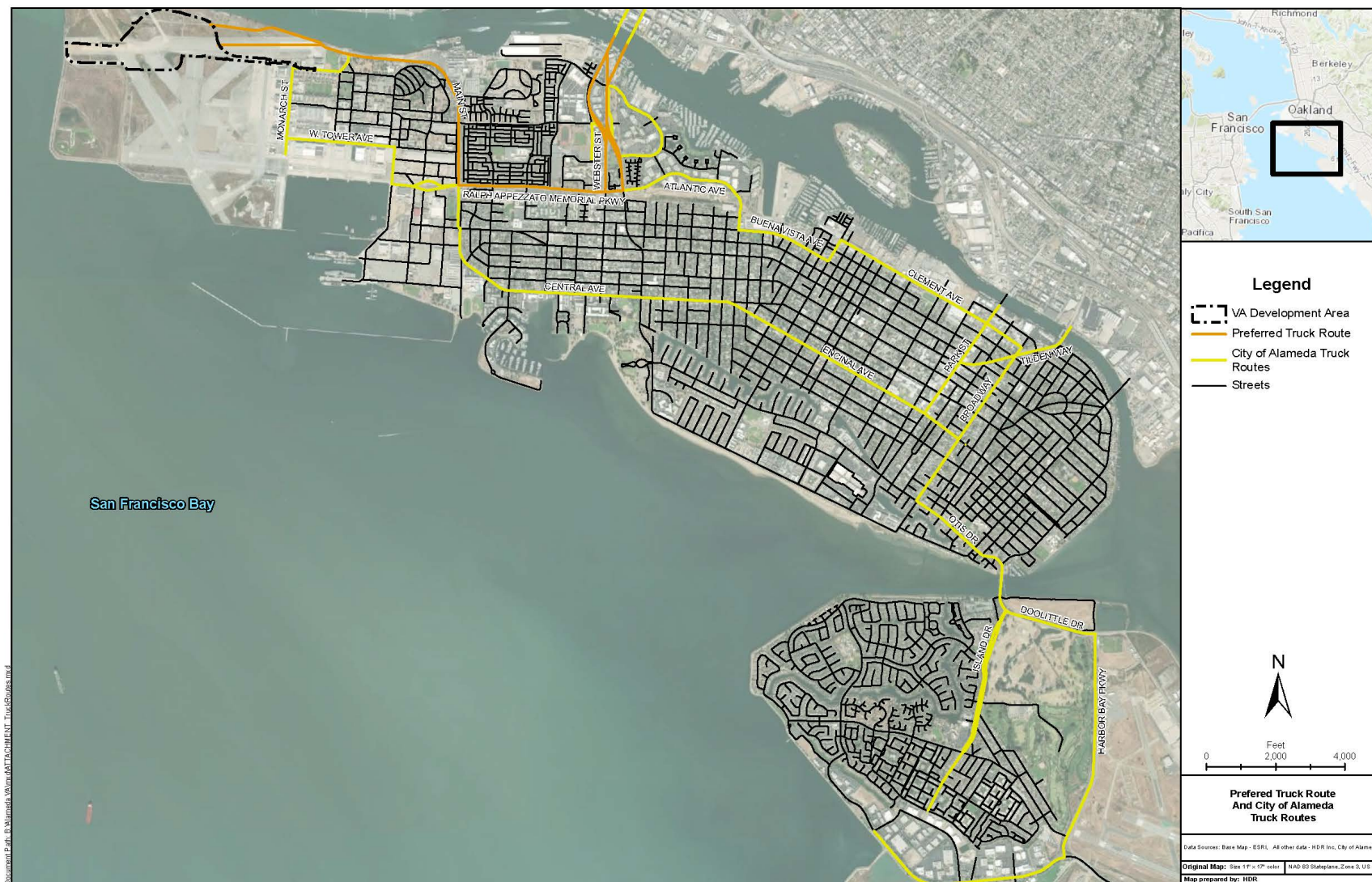
Construction Condition Sensitivity Analysis

Construction activities of the Proposed Action would generate temporary off-site traffic that would include initial delivery of construction equipment, daily deliveries of construction materials and debris, and daily trips of construction workers throughout the construction period. Please see construction schedule, quantity, equipment, and material in Section 2.2.1. The approximate daily number of truck trips during the peak construction is 380. Vehicle trips generated by construction activities generally do not align with the traditional peak hours (Monday through Friday 7:00 AM to 9:00 AM and 3:00 PM to 7:00 PM) given the dispersed delivery activities throughout the day and the construction schedule (typically 7:00 AM to 4:00 PM), which causes construction workers to commute outside of the traditional peak hours.

To assess the temporary impact of construction activities of the Proposed Action, a sensitivity analysis was conducted with the assumption that all construction trucks take the same truck routes to the VA Transfer Parcel.

Figure 3-8 displays the preferred truck route for construction and all truck routes for Alameda. It was determined the worst operating intersection and segment along the truck routes would be Otis Drive and Fernside Boulevard (Intersection #25) and SR 61 (Otis Drive) between Fernside Boulevard and Broadway (Arterial Segment #2) westbound. The intersection and roadway segment were evaluated to determine when a threshold would be exceeded by adding construction trucks. See the *Existing Traffic Conditions* section for details on the thresholds (intersection LOS degrade to LOS E and segment v/c increase by 0.03). Since most of the workers and equipment and material deliveries are expected before or during the AM peak hour, the construction impact is assessed during the AM peak hour. Further, to reflect the worst-case scenario of construction, the sensitivity analysis was conducted using the 2025 No Action Condition volume. The sensitivity analysis revealed that construction would not cause a temporary impact if the peak construction vehicles do not exceed 47 trucks per hour during the peak hour; therefore, the proposed project will be restricted to 47 or less trucks per hour during peak hours. It is also likely that construction truck drivers would plan trips to arrive to the proposed project area outside of peak hours to avoid traffic congestion. As noted above, the approximate daily number of truck trips during peak construction is 380. See Appendix D for the detailed assumptions and calculation methods of the sensitivity analysis.

Figure 3-8. Preferred Truck Route and City of Alameda Truck Routes



3.5 Cultural Resources

3.5.1 Regulatory Setting

Federal Regulations

For a discussion of federal regulations refer to Section 3.4.1 (*Cultural Resources Regulatory Framework*) of the 2013 EA. Below is a summary of the State regulatory guidance.

State Regulations

No State regulations are relevant to the cultural resources analysis.

3.5.2 Affected Environment

The affected environment for archaeological and historic resources is defined as containing all of the area included in the 2013 EA as well as the three storm drain paths and outfall locations, the one area of wetland mitigation, and the off-site utility trenches; this area comprises the current Area of Potential Affect (APE) for NHPA compliance purposes. The off-site utility trenches are within the area considered in the 2013 EA but the activity and its potential for impacts were not analyzed. The temporary laydown areas associated with the modular buildings and a portion of the wetlands mitigation areas were considered in the 2013 EA, but the proposed project activity in that area has changed, so the laydown areas are considered in this report for their impacts to historic resources. The deep dynamic compaction (DDC) areas were also considered in the 2013 EA, though their locations were not defined. These impact areas are considered to determine the impacts of DDC on historic resources. A summary of the affected environment, as it applies to this SEA, is provided below. In addition, the full Prehistoric and Archaeological Context as well as the full Historic Context for the former NAS Alameda are included in Section 3.4.2 (*Cultural Resources Affected Environment*) of the 2013 EA, and no notable events have occurred since the 2013 documentation that required additions to the contexts.

Background Research Efforts

Existing conditions were identified through pre-field research and a review of existing information for the former NAS Alameda. Research efforts included a request to the Northwest Information Center of the California Historical Resources Information System to conduct a records and literature search of the VA Transfer Parcel and a surrounding one-quarter-mile area. The Northwest Information Center responded with comments on March 26, 2012 (Northwest Information Center File No. 11-1036). The search identified no known historic properties within the VA Transfer Parcel or within the surrounding one-quarter-mile area. Because the records search included the surrounding area, the entire proposed expanded APE included in this SEA was captured in the original records search and an additional search was not deemed necessary.¹

¹ The VA determined that the results from the 2012 records search were sufficient for the current effort. There are no unevaluated resources in the APE, and the archaeological sensitivity has not changed appreciably.

Literature Review and Previous Studies

To complete the analysis for this SEA, HDR reviewed previous documentation to evaluate the potential for encountering historic properties in the proposed expanded APE. These documents included the 1992 *Historic Architectural Resources Inventory for Naval Air Station, Alameda* (Woodbridge 1992); the 1996 Navy-prepared archaeological evaluation of the former Fleet Industrial Supply Center (PAR Environmental Services [PAR] 1996); the 1997 *Guide to Preserving the Character of the Naval Air Station Alameda Historic District* (JRP Historical Consulting [JRP] 1997); the 1997 *Historic Property Survey Report/Finding of Effect* (Basin Research Associates [BRA] 1997); the 1999 Navy-prepared environmental impact statement (EIS) concerning the disposal and reuse of the former NAS Alameda and Memorandum of Agreement (MOA) (Navy 1999); the 2011 *Combined Specific Buildings Survey and Evaluation Report/Cold War Era Historic Resources Survey and Evaluation Report* (Combined Evaluation Report) (JRP 2011); the 2012 *Cultural Landscape Report of Naval Air Station Alameda* (CLR) (JRP and PGAdesign 2012); and the 2012 *NAS Alameda Historic District Nomination* (JRP 2012).

Two previous studies analyzed the low potential of encountering archaeological resources at the former NAS Alameda. In 1996, the Navy prepared an archaeological evaluation of the former Fleet Industrial Supply Center – Alameda Annex and Family Housing Areas. The evaluation of that project area, located east of the approved APE and Main Street, included a pedestrian (walk-through) survey of those areas and analysis of historic maps. The report concluded that the project area had been an undeveloped natural marshland before 1918, when it was filled. The map analysis also demonstrates that the majority of the former NAS Alameda (and both of the approved and proposed APEs) was built on artificial fill, filled in multiple phases between 1892 and 1960 (PAR 1996).

In 1999, the Navy prepared an EIS concerning the disposal and reuse of the former NAS Alameda. Based on the fill history of the majority of the former NAS Alameda and the manner in which the fill was placed, the Navy concluded that the potential for buried cultural resources, either prehistoric or historic, was extremely low. The EIS examined the possibility of historic resources beneath the fill. These potential resources included remnants of historic land uses such as the former South Pacific Coast Railroad Terminal, Alameda Airport, Pan Am airline facilities, Alameda Yacht Basin, ship hulls used in land creation, and the Army's Benton Field. However, the Navy concluded that the potential to encounter these remnants or historic-period archaeological resources was low due to the manner in which the artificial fill was placed. The EIS states that the Twelfth Naval District was reportedly responsible for acquiring, dredging, filling, and constructing NAS Alameda. Prior to infilling, construction debris (concrete, asphalt, and building rubble) was removed, and the area was scarified. Because all pilings and submerged objects were removed from the water before fill was introduced, the fill material was allowed to settle more evenly, and future potential construction obstructions could be prevented (Navy 1999; PAR 1996).

Additional studies and Section 106 consultation address the known historic properties identified at the former NAS Alameda. The NAS Alameda Historic District, listed in the NRHP in 2013, is located immediately adjacent to and east of the VA Transfer Parcel. Based on the study *Historic Architectural Resources Inventory for Naval Air Station*,

Alameda (Woodbridge 1992), the Navy determined in 1992 that the Historic District was eligible for inclusion in the NRHP. That same year, the State Historic Preservation Office (SHPO) concurred with the Navy's conclusion. The NAS Alameda Historic District was listed in the NRHP under Criterion A for its significance as a World War II-era naval air station (1938 to 1945) under the contextual theme of the development of US Navy bases in the San Francisco Bay Area in World War II, and under Criterion C because of its master planning and architecture in the Moderne style. The NAS Alameda Historic District initially included 85 resources. The number of district contributors was increased to 87 through the Navy's consultation with SHPO but was subsequently reduced to 86 contributing resources after a damaging fire occurred in one building.

In 1997, the Guide to Preserving the Character of the Naval Air Station Alameda Historic District (JRP 1997) was prepared for the Navy to identify character-defining elements of the NAS Alameda Historic District. The study also defined significant vistas, viewsheds, open spaces, streetscapes, and landscape elements that contributed to the Historic District. In October 1997, a Historic Property Survey Report/Finding of Effect was issued (BRA 1997).

In 1999, the Navy entered into a Section 106 MOA titled *Memorandum of Agreement Among the United States Navy, the Advisory Council on Historic Preservation and the California State Historic Preservation Regarding the Layaway, Caretaker Maintenance, Leasing, and Disposal of Historic Properties on the Former Naval Air Station, Alameda, California*. The MOA identified the NAS Alameda Historic District and the south jetty of the "Oakland Inner Harbor Jetties and Federal Channel Historic District" (Alameda Training Wall) as historic properties. The 1999 MOA did not identify any archaeological sites eligible for inclusion in the NRHP (Navy et al. 1999). The Alameda Training Wall was located outside the project APE in the 2013 EA and had no potential to be affected.

To support transferring portions of the former NAS Alameda to the City of Alameda, the Navy prepared additional evaluation reports and an NRHP Nomination for the NAS Alameda Historic District in 2011 and 2012. The Navy completed these reports to (1) complete the identification of historic properties on the former NAS Alameda and (2) nominate the NAS Alameda Historic District for inclusion in the NRHP. As part of this effort, two evaluation reports were prepared: Combined Evaluation Report (JRP 2011) and CLR (JRP and PGAdesign 2012). SHPO concurred with the findings of the Combined Evaluation Report in 2011 (Office of Historic Preservation [OHP] 2011) and with the findings of the CLR in 2012 (OHP 2012).

The Combined Evaluation Report concluded that no buildings and/or structures met the criteria for inclusion in the NRHP or the California Register of Historical Resources individually under World War II- or Cold War-era contexts. The report found no Cold War-era buildings eligible for inclusion in the NRHP. The report also identified 13 additional contributing elements to the NAS Alameda Historic District (JRP 2011).

In 2012, the CLR identified a historic designed landscape as a contributing element of the NAS Alameda Historic District. The CLR concluded that no NRHP-eligible cultural landscapes or landscape features occur outside the boundary of the historic district (JRP and PGAdesign 2012).

The Navy also prepared an NRHP nomination for the NAS Alameda Historic District. This nomination was submitted to the Keeper of the National Register in December 2012, and the district was listed in 2013.

Finally, in support of the SEA, the VA contacted the Native American Heritage Commission (NAHC) on February 17, 2020, to obtain a list of tribes and tribal individuals who may have an interest in the Project, and to request a search of the NAHC's Sacred Lands File for a list of any known sacred lands that might exist within the existing APE. Those tribes include seven state-recognized tribes:

- the Amah Mutsun Tribal Band of Mission San Juan Bautista,
- the Costanoan Rumsen Carmel Tribe,
- the Indian Canyon Mutsun Tribe of Costanoan,
- the Muwekma Ohlone Tribe of the San Francisco Bay Area,
- the Ohlone Indian Tribe,
- the Confederated Villages of Lisjan, and
- the North Valley Yokuts Tribe.

In their response letter dated February 18, 2020, the NAHC indicated that the search of the Sacred Lands File was positive and recommended contacting Ms. Katherine Perez of Nototomne Cultural Preservation and the North Valley Yokuts Tribe for further information. Each of the tribal groups noted above, as well as the federally recognized California Valley Miwok Tribe, was contacted regarding the potential for tribal cultural resources. Consultation with the North Valley Yokuts Tribe and the California Valley Miwok Tribe, as well as the other tribes and tribal representatives provided by the NAHC, was initiated in a letter dated May 12, 2020.

Ms. Perez of the North Valley Yokuts Tribe responded to the letter via email on May 14, 2020 and requested a site visit, consultation, and tribal monitoring of the project. Her email response included proposed mitigation measures from the Tribe's perspective covering Tribal Cultural Resource awareness training, Tribal Cultural Resource avoidance procedures, inadvertent discovery protocol, Native American monitoring, and post-disturbance site visits. Ms. Perez was contacted on July 1, 2020, July 14, 2020, and on July 24, 2020, to continue consultation; however no further response has been received.

Mr. Galvan of the Ohlone Indian Tribe responded to the letter via email on May 15, 2020, and requested information regarding whether a Phase I Literature Search was conducted, information regarding any pedestrian survey, a copy of the request to the NAHC with all attachments, and a copy of the report. Mr. Galvan was contacted on July 1, 2020, July 14, 2020, and on July 24, 2020, as well to continue consultation however no further response has been received.

No additional comments from any of the Native American tribes and/or tribal representatives have been received.

Previously Identified Cultural Resources

Archaeological Resources

No archaeological resources have been identified within either the current 2013 EA APE or the proposed APE described in this SEA. The likelihood of encountering previously unidentified prehistoric or historic-period archaeological resources is considered by VA to be low based on the geographical and geomorphological history of the landform, the fill history of the area, and the Navy's protocols for infilling (Navy 1999; PAR 1996).

Historic Resources

VA DEVELOPMENT AREA

One NRHP-eligible historic property was identified in the 2013 EA as having the potential to be affected by the project – the NAS Alameda Historic District. This property was included in the approved 2013 EA at the request of SHPO to capture any potential indirect visual effects on the resource and its contributing buildings, structures, and objects. No portion of the historic district is physically located within the VA Development Area or the proposed APE expansion area described in this SEA, and the district was previously found to have “no adverse effect” from the proposed project in the 2013 EA. A portion of the approved APE is located within the potential DDC impact area, meaning that DDC activity could occur within the impact radius of the historic district. The historic district is eligible under NRHP Criterion A for its association with the strategic development of naval air stations in the 1930s, development of naval facilities in the Bay Area during World War II, and the Navy's role in Pacific-theater naval operations during World War II. The NAS Alameda Historic District is also eligible under Criterion C for its distinctive characteristics of type, period, and method of construction (Moderne style) in its design and planning.

OFF-SITE UTILITY/ROAD CORRIDOR AND OFF-SITE UTILITY TRENCHES

No historic resources have been identified within the proposed off-site utility/road corridor. The off-site utility/road corridor would be constructed along West Redline Avenue and Main Street, which runs directly adjacent to the northern boundary of the NAS Alameda Historic District. The two roads are not contributing resources to the historic district. Therefore, no historic properties are located within this corridor.

The two off-site utility trenches (electrical and gas/joint) will both be excavated within the boundaries of the NAS Alameda Historic District which, as noted above, is listed on the NRHP.

Newly Identified Cultural Resources

Archaeological Resources

No new archaeological resources have been identified within either the current 2013 EA APE or the proposed APE described in this SEA.

Historic Resources

VA DEVELOPMENT AREA

Through the addition of three new storm drains along the south shore of the Oakland Inner Harbor, the proposed expanded APE described in this SEA now includes one additional NRHP-eligible historic property: the Alameda Training Wall. The wall was originally constructed in 1874–1896, with newer portions being built in 1938–1942. The previous evaluation, which SHPO concurred on, states that only about 1,750 feet of the wall, the only remaining portion dating from 1874–1896, is NRHP eligible, and that the remaining newer portions are ineligible because they relate to the development of the NAS Alameda Airfield, which was previously determined, with SHPO concurrence, to be ineligible for inclusion in the NRHP (VA 2013). A portion of the approved APE and training wall is located within the proposed DDC impact area, meaning that DDC activity could occur near the wall.

No additional previously identified built-environment historic resources are located within the approved or proposed APEs.

Assessment Methods

This section assesses effects on cultural resources that meet the eligibility criteria for listing in the NRHP. When evaluating the significance of project impacts under NEPA, the following analysis applies the National Historic Preservation Act Section 106 criteria for adverse effect. 36 CFR Part 800.5 defines an undertaking (action) as having an adverse effect on historic properties if the effect would alter the characteristics that qualify a property for inclusion in the NRHP. Examples of adverse effects include:

- Physical destruction of or damage to all or part of the property;
- Alteration of the 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's (SOI) Standards for the Treatment of Historic Properties* (36 CFR 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change in the character of the property's use or physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of a property's character-defining features;
- Neglect of the property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe or Native Hawaiian organization; or
- Transfer, lease, or sale of the 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.

Previous Environmental Assessment

The VA conducted previous consultation under Section 106 of the National Historic Preservation Act in 2012 and 2013 and also developed a separate technical report in support of the EA during that period. As a result, the VA found that the proposed project would have no adverse effect on historic properties. That finding was documented in the EA, and SHPO concurred with the finding on May 17, 2013 (VA 2013: Appendix E).

This analysis does not change the findings of the 2013 EA and instead supplements the document through the discussion of newly identified project actions that may impact historic resources. The management measures documented in the 2013 EA would remain as they relate to archaeological resources in the unlikely event that cultural resources are encountered.

Supplemental Environmental Assessment

The proposed project as described in the 2013 EA has changed. The following new proposed activities included for analysis in this SEA have the potential to impact historic properties: installation of new storm drains that are included in the stormwater management plan for the proposed project; wetlands mitigation, including on-site creation of a new tidal wetland; and locations where DDC may occur. The temporary laydown areas associated with the temporary modular buildings have no potential to impact historic properties.

The expanded APE for this SEA has been defined as containing all of the area included in the 2013 EA, as well as the two storm drain paths and outfall locations, the one area of wetland mitigation, and the off-site utility trenches. The temporary laydown areas now associated with the modular buildings and a portion of the wetlands mitigation areas were considered in the 2013 EA; however, the proposed project activity in the wetlands mitigation area has changed, so the wetlands laydown areas are considered in this SEA. The DDC impact areas were also considered in the 2013 EA, though their exact locations were not defined. These impact areas are considered in this report to determine the impacts of DDC on historic resources. The off-site utility trenches are within the area included in the 2013 EA but the trench development and any associated impacts were not analyzed in that EA.

Archaeological Resources

No new archaeological resources have been identified within either the current 2013 EA APE or the proposed APE described in this SEA. In the unlikely event of an inadvertent discovery of previously undocumented archaeological resources or human remains, consultation with the SHPO, in accordance with 36 CFR 800.13, will occur and the following management measure will be followed, as described in the 2013 EA:

If an inadvertent discovery of cultural materials (for example, unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains) or human remains is made during construction activities associated with the project, ground disturbances in the area of the find will be halted and a qualified professional archaeologist will be notified regarding the discovery. The archaeologist will determine whether the resource is potentially significant according to the evaluation criteria of the National Historic Preservation Act and will develop appropriate mitigation. If human remains are

encountered, the Alameda County Coroner will be notified immediately upon their discovery. If the coroner determines that the remains are of Native American origin, the provisions of NAGPRA will apply.

Implementation of this management measure would reduce potentially adverse impacts of Alternative 2 resulting from inadvertent damage or destruction of presently undocumented archaeological resources and human remains during construction. Therefore, no significant adverse construction impacts on archaeological resources would occur.

Historic Resources

Two built-environment, historic resources were identified within the proposed expanded APE described in this SEA: the Alameda Training Wall, and the NAS Alameda National Register Historic District. Both resources are listed in the NRHP and thus are historic properties. Because both resources were already concurred with as being eligible by SHPO, neither required re-evaluation.

The Alameda Training Wall

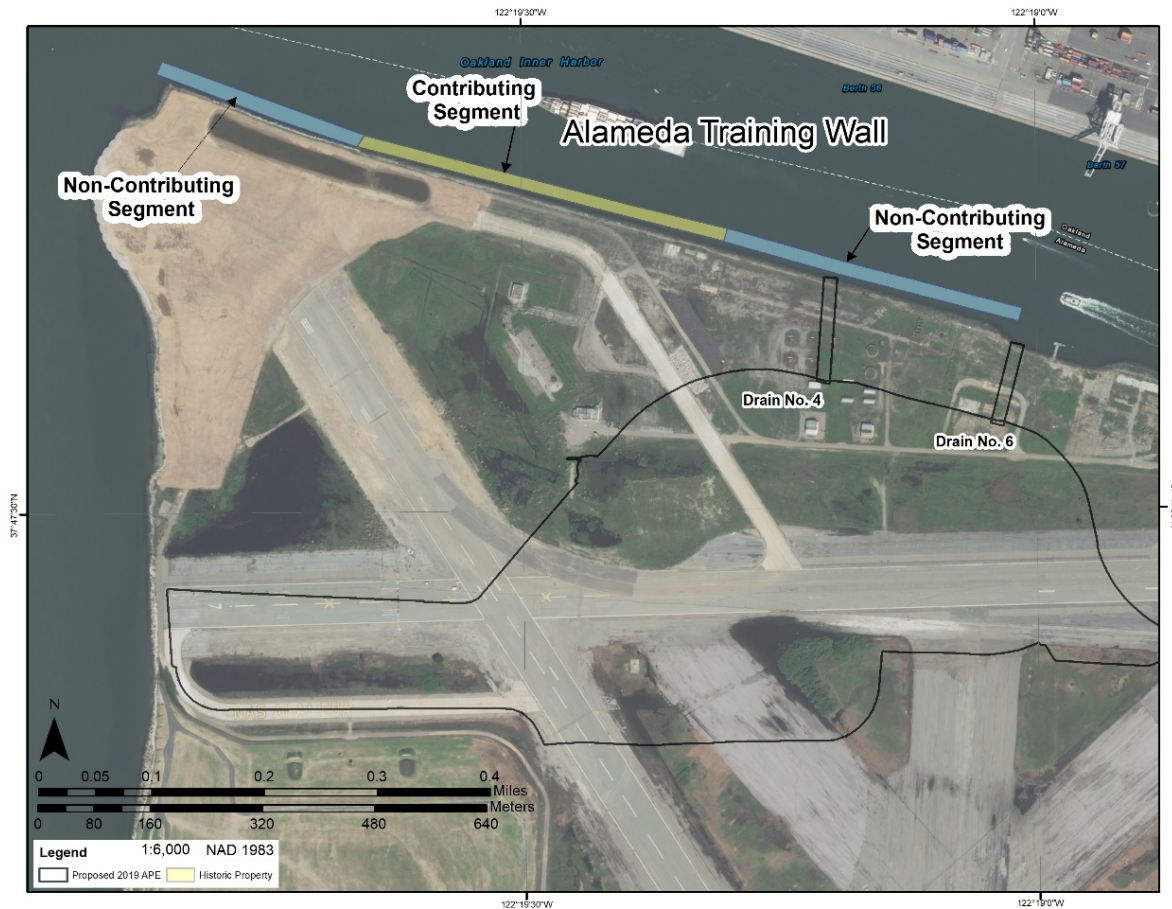
The Alameda Training Wall is included in the NRHP and has three distinct segments. Two of those segments are non-contributing and are not considered historic properties. The third segment, which measures 1,750 feet, constitutes the only segment remaining from 1874–96 (see Figure 3-9).

3.5.3 Environmental Consequences

Two storm drain connections are proposed as a component of the SEA and proposed expanded APE. One of those drains, Outfall 06, would be inserted into the south shore of the Oakland Inner Harbor immediately southeast of the easternmost section of the wall, and would not physically impact the training wall. Outfall 06 would have no potential to impact the wall, since the outfall would release water into the harbor beyond the extent of the existing wall. The second drain, Outfall 04, would be inserted into the Alameda Training Wall within the rebuilt and non-contributing section at the southeastern end of the wall. The alteration, embedding a new storm drain outfall, would have no potential to impact the character-defining features that qualify the wall for inclusion in the NRHP, since the pipe would be constructed in a non-contributing section. The new outfall would be located about 500 feet southeast of where the intact section of the wall begins to the northwest, and the new drain would be minimally visible if not entirely invisible from the intact (contributing) section of wall. Because neither outfall would be inserted within an eligible or contributing section of the Alameda Training Wall: no physical destruction would occur to any character-defining features, no alteration would occur that is inconsistent with the SOI standards; no portion of eligible property would be removed; no change in use would occur and the alteration would be very minimal; the property would continue to be maintained as it is now; and no transfer, lease, or sale would occur. Thus, the overall effect of constructing the two drains is recommended to be not adverse.

Figure 3-9 shows the location of the Alameda Training Wall contributing and noncontributing segments.

Figure 3-9. Location of Alameda Training Wall Contributing and Noncontributing Segments



*Note: location of proposed drains, Drain No. 4 would be located within a non-contributing segment of the wall and Drain No. 6 would not physically impact the wall.

Vibration Analysis

Since the project was approved in 2013, the locations where DDC would need to occur have been further identified, though the exact location, intensity, and duration of vibration activity are not yet defined.

DDC involves densifying soil by dropping a large steel weight from a crane. Typical weights range from 10 to 30 tons and are dropped from heights of 40 to 80 feet. The Federal Highway Administration, National Highway Institute, and Federal Transit Administration have provided guidance for assessing impacts from compaction. HDR used this guidance to analyze the effects on the Alameda Training Wall and the NAS Alameda Historic District. This guidance includes equations for estimating the vibrations resulting from DDC based on the weight, drop height, and soil conditions and for assessing acceptable stable vibration levels (Federal Highway Administration and National Highway Institute 2017: Section 2.0; Federal Transit Administration 2006: Section 12.2).

Peak particle velocity (PPV) vibration thresholds of 0.12 inches per second for historic structures and 0.3 inches per second for masonry structures are typically used for

steady-state vibration sources as a threshold to measure acceptable vibration levels, measured as velocity level in decibels. These thresholds can be overly conservative given that the duration of vibrations induced by DDC is very short and thus is not truly stable. To assess the vibration effects of the proposed project, HDR considered factors associated with a worst-case scenario. With an assumed drop weight of 30 tons, a drop height of 80 feet, and very stiff clay soil, the distance to the 0.3 inches per second vibration levels would be 680 feet for the Alameda Training Wall (Federal Transit Administration 2006: 12-12, Table 3-33). This means that if any DDC activity were to occur within 680 feet of the wall, it could be damaged. This is the Alameda Training Wall DDC impact area.

Table 3-33. PPV Guideline Vibration Damage Criteria

Building Category	PPV (inches/second)	Approximate Velocity Level (decibels)
Reinforced concrete, steel, or timber (no plaster)	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

Figure 3-10 shows the location where the DDC activity could overlap with the approved APE, and Figure 3-11 shows a detail of the overlap near the training wall. Because the full extent of vibration intensity and duration has not yet been identified for the proposed project, these areas will be used as a guide for understanding impact areas. In addition, since vibration intensity and location require further definition, it is unknown at this time specifically what features of the historic property could be affected.

Because the necessary factors for impact assessment are not yet available, if any portion of the Alameda Training Wall is determined to overlap with the DDC impact area, additional analysis will be required, and specific impacts will be assessed at that time. Thus, the effect on the wall is recommended as not adverse with the understanding that any DDC activity that could occur within 680 feet of the wall will be assessed for effects at a later time as construction activity is further defined. HDR recommends that further vibration analysis and monitoring occur if any portion of the wall is located within the DDC impact area (within 680 feet of the structure).

NAS Alameda National Register Historic District

Similar to the effects analyzed for the Alameda Training Wall, the contributing buildings and structures in the NAS Alameda Historic District were also reviewed for effects due to vibration. Impacts due to potential physical alteration, noise, and visual impacts were all assessed within the 2013 EA and no new impacts are anticipated to the district except for the potential vibration impacts described in this SEA.

Figure 3-10. Location of Potential DDC Activity

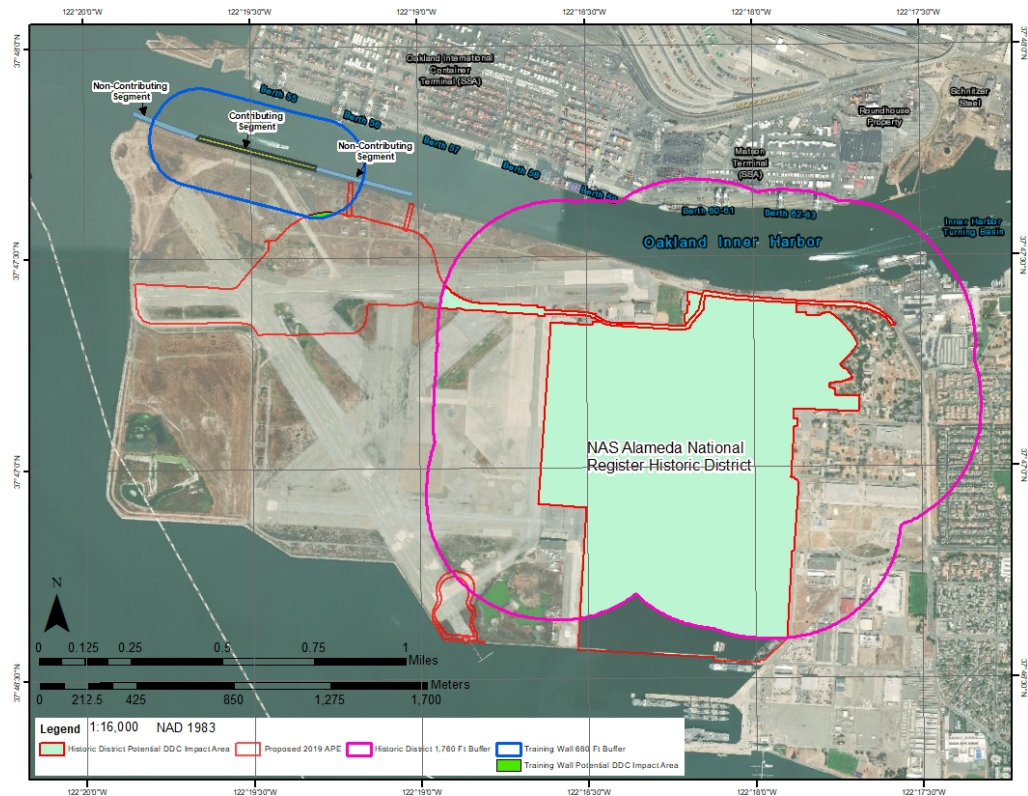


Figure 3-11. Location of Potential DDC Activity Overlapping with Alameda Training Wall



A similarly conservative approach was used to assess potential effects, including assuming that all buildings and structures are extremely susceptible to vibration damage (see Figure 3-12 and Figure 3-13). These thresholds might be overly conservative given that the duration of vibrations induced by DDC is very short and thus is not truly stable. To assess the vibration effects of the proposed project, HDR considered factors associated with a worst-case scenario.

With an assumed drop weight of 30 tons, a drop height of 80 feet, and very stiff clay soil, the distance to the 0.12 inches/second vibration levels would be 1,760 feet for the NAS Alameda Historic District (Federal Transit Administration 2006: 12-12, Table 3-33). This is the NAS Alameda National Register Historic District DDC impact area.

In other words, to ensure that vibration intensity remains under the recommended thresholds, DDC activity should not occur within 1,760 feet of any contributing buildings or structures in the NAS Alameda Historic District.

Because the necessary factors for impact assessment are not yet available, if any portion of the contributing buildings and structures in the NAS Alameda Historic District is determined to overlap with the DDC impact area, additional analysis will be required, and specific impacts will be assessed at that time. Thus, the effect on the historic district is recommended as not adverse with the understanding that any DDC activity that could occur within 1,760 feet of any eligible, contributing resource within the district will be assessed for effects at a later time as construction activity is further defined. HDR recommends that further vibration analysis and monitoring occur if any contributing building or structure is within the DDC impact area (within 1,760 feet of the structure).

Figure 3-12. Location of Potential DDC Activity Overlapping with NAS Alameda Historic District

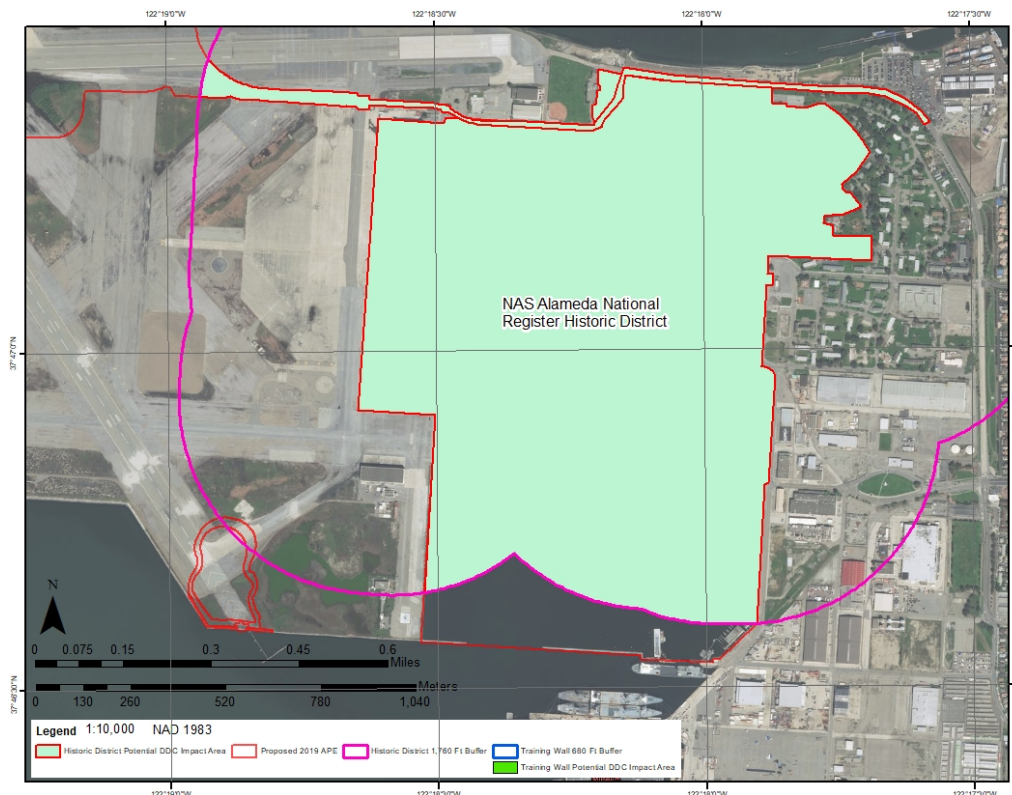
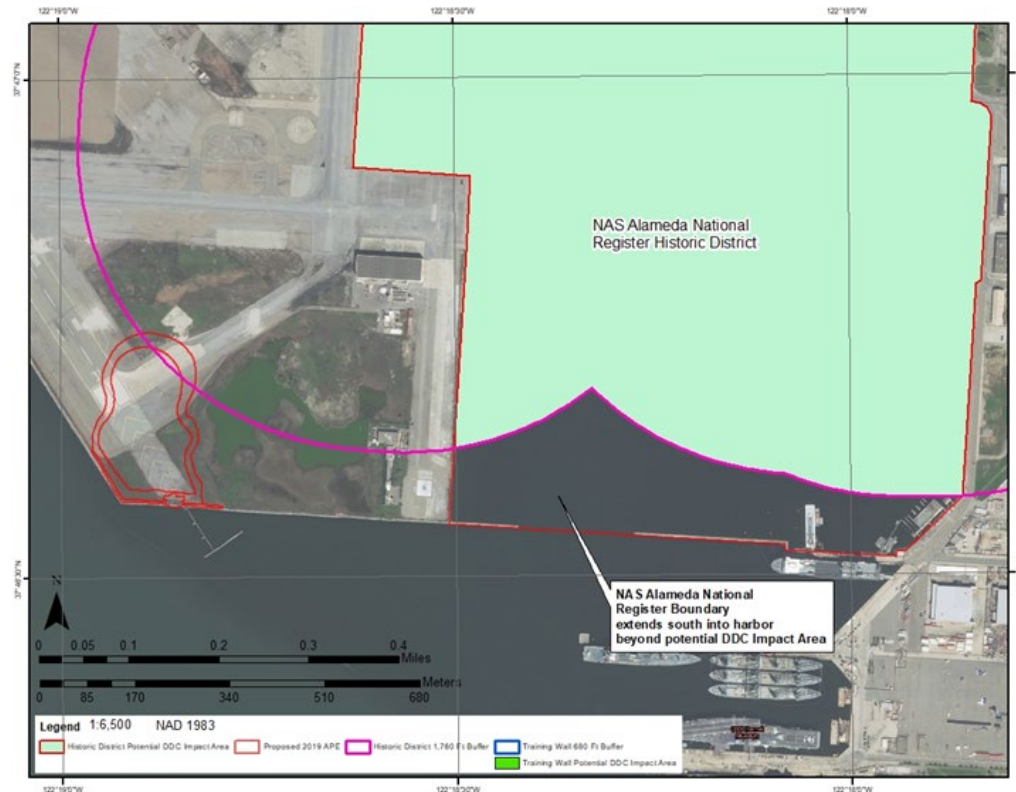


Figure 3-13. Detail Showing Location of Potential DDC Activity Overlapping with NAS Alameda Historic District



Off-site Utility Trenches

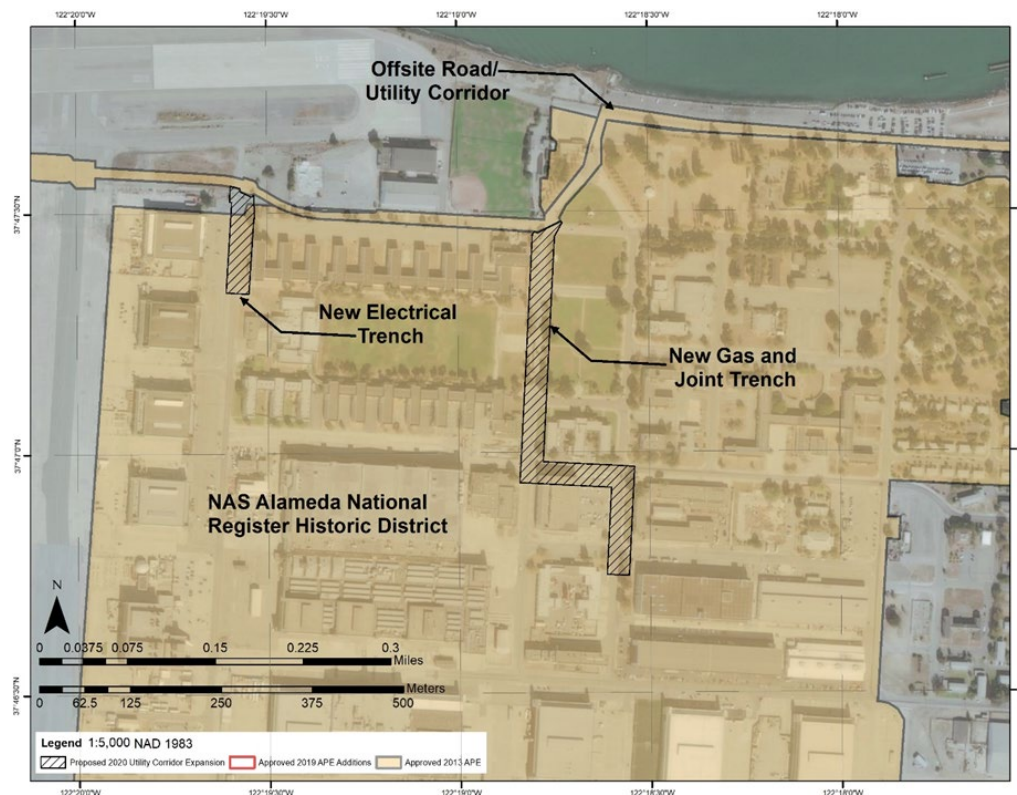
Two off-site utility trenches are proposed as a component of the SEA and proposed expanded APE. The gas and joint line will be placed in a new trench under Saratoga Street. Electrical and communications conduits will be added into the trench from tie-ins to existing vaults along West Midway Avenue. From West Midway Avenue the joint trench continues North on Lexington Street to the intersection of Lexington Street and West Redline Avenue where it joins into an existing gas trench. The trench for electrical conduits will be excavated under the sidewalk from existing Substation #7 to West Redline Avenue where it will join into a trench under the street. In both cases, the street and sidewalk surfaces will be restored or constructed new at existing elevations and will appear similar to pre-construction conditions. Utility vault and manhole covers, per utility company standards, will be visible on the surface. No new above ground transformers or switch equipment will be installed as part of this utility work.

When applying the criteria and examples of adverse effect, the off-site utilities would not cause physical destruction to the NAS Alameda Historic District. Asphalt and concrete patching above the trenches would be consistent with the Secretary of the Interior's standards for the treatment of historic properties and applicable guidelines, as the replaced surface material would be replaced in-kind, and appear visually similar to the current condition of the roadway and sidewalk. The property would not be moved from its original location. There would be no change to the property's use or to physical features within the property's setting that contribute to its historic significance. In addition, though the asphalt and sidewalk patching may be minimally visible upon completion, and

manhole covers would be added to access underground vaults, the overall effect to the setting of the District is recommended as minimal and non-adverse as none of the character-defining features of the setting and Historic Designed Landscape would have any potential to be impacted. The introduction of visual, atmospheric or audible elements that could diminish the integrity of the property's significant historic features would not occur. In addition, the project would not result in the neglect of the property, or lead to a transfer, lease, or sale of the property out of federal ownership. Thus, the proposed alteration to proposed project activities would result in no adverse effect to the NAS Alameda Historic District, consistent with the previous 2013 and 2020 effect findings.

Figure 3-14 shows the location of the off-site utility trenches within the NAS Alameda Historic District.

Figure 3-14. Detail Showing Location of Off-site Utility Trenches



Summary of Environmental Consequences

It is the finding of this SEA that the previous finding from the 2013 EA of “no adverse effect on historic properties” remains valid with the current 2013 mitigation measures remaining in place and recommendation that further analysis occur for vibration impacts as needed depending on where they would occur. SHPO concurred with this finding in a letter dated June 29, 2020 (Appendix E, *Cultural Resources Supporting Information*). Concurrence from SHPO regarding the off-site utility trenches is pending.

3.6 Air Quality, Greenhouse Gas Emissions, and Climate Change

3.6.1 Air Quality Regulatory Setting

Federal Regulations

Federal Clean Air Act

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality. These laws, and related regulations by the United States Environmental Protection Agency (USEPA) and the California ARB, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO); nitrogen dioxide (NO₂); ozone (O₃); particulate matter, which is categorized for regulatory purposes into particles of 10 micrometers and smaller (PM₁₀) and particles of 2.5 micrometers and smaller (PM_{2.5}); and sulfur dioxide (SO₂). In addition, national standards exist for lead. The NAAQS are set at levels that protect public health with a margin of safety and are periodically reviewed and revised. Toxic air contaminants are covered as well.

The FCAA requires USEPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal and state standards are summarized in Table 3-34. USEPA has classified the San Francisco Bay Area Air Basin (SFBAAB) as nonattainment for O₃ and PM_{2.5}.

General Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to the State Implementation Plan (SIP) for attaining the NAAQS.

Conformity requirements apply only in nonattainment and maintenance areas for the NAAQS, and only for the specific NAAQS that are or were violated. USEPA regulations at 40 CFR Part 93 govern the conformity process. Conformity requirements do not apply in unclassifiable or attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

The USEPA General Conformity Rule (40 CFR Part 93, Subpart B) applies to federal actions, other than those related to highway and transit planning and projects, that cause emissions of nonattainment or maintenance pollutants, or their precursors, in federally designated nonattainment or maintenance areas. The General Conformity Rule establishes a process to demonstrate that federal actions would be consistent with applicable SIPs and would not cause or contribute to new violations of the NAAQS, increase the frequency or severity of existing violations of the NAAQS, or delay the timely attainment of the NAAQS. The emissions thresholds that trigger requirements of the General Conformity Rule for federal actions emitting nonattainment or maintenance

pollutants, or their precursors, are called *de minimis* levels. The general conformity *de minimis* thresholds are defined in 40 CFR Section 93.153(b).

State Regulations

California Clean Air Act

The California Clean Air Act (CCAA) is administered by ARB at the state level and by the air quality management districts and air pollution control districts at the regional and local levels. ARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the state requirements of the FCAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

ARB also regulates mobile air pollution sources, such as motor vehicles. ARB is responsible for setting emission standards for vehicles sold in California and other emission sources, such as consumer products and certain off-road equipment. ARB established passenger vehicle fuel specifications, which became effective in March 1996.

ARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The federal and state standards are summarized in Table 3-34. The CCAA requires ARB to designate areas in California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous 3 calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment.

Under the CCAA, the SFBAAB is designated as a nonattainment area for O₃, PM_{2.5}, and PM₁₀.

Table 3-34. Federal and State Criteria Air Pollutant Standards, Effects, Sources, and Attainment Status

Pollutant	Averaging Time	State Standard ^a	Federal Standard ^b	Principal Health and Atmospheric Effects	Typical Sources	SFBAAB Attainment Status
Ozone (O ₃) ^c	1 hour 8 hours	0.09 ppm 0.070 ppm	— 0.070 ppm (4th highest in 3 years)	High concentrations irritate lungs. Long-term exposure could cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds (VOCs) might also contribute.	Low-altitude O ₃ is almost entirely formed from reactive organic gases (ROGs)/VOCs and nitrogen oxides (NO _x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	Federal: Nonattainment (8-hour) State: Nonattainment (1-hour and 8-hour)
Carbon monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm 6 ppm	35 ppm 9 ppm —	Interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. Also is a minor precursor for photochemical O ₃ .	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scales.	Federal: Attainment State: Attainment
Respirable particulate matter (PM ₁₀) ^d	24 hours Annual	50 µg/m ³ 20 µg/m ³	150 µg/m ³ — ^f (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM ₁₀ .	Dust- and fume-producing industrial and agricultural operations, combustion smoke and vehicle exhaust, atmospheric chemical reactions, construction and other dust-producing activities, unpaved road dust and re-entrained paved road dust, and natural sources.	Federal: Unclassified State: Nonattainment
Fine particulate matter (PM _{2.5}) ^d	24 hours Annual Secondary Standard (annual)	— 12 µg/m ³ —	35 µg/m ³ 12.0 µg/m ³ 15 µg/m ³ (98th percentile over 3 years)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter—a toxic air contaminant—is in the PM _{2.5} size range. Many toxic and other aerosol and solid compounds are part of PM _{2.5} .	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO _x , sulfur oxides, ammonia, and ROG.	Federal: Nonattainment State: Nonattainment

Pollutant	Averaging Time	State Standard ^a	Federal Standard ^b	Principal Health and Atmospheric Effects	Typical Sources	SFBAAB Attainment Status
Nitrogen dioxide (NO ₂) ^e	1 hour Annual	0.18 ppm 0.030 ppm	100 ppb (98th percentile over 3 years) 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the NO _x group of O ₃ precursors.	Motor vehicles and other mobile sources, refineries, and industrial operations.	Federal: Attainment State: Attainment
Sulfur dioxide (SO ₂) ^f	1 hour 3 hours 24 hours Annual arithmetic mean	0.25 ppm — 0.04 ppm —	75 ppb (99th percentile over 3 years) 0.5 ppm 0.14 ppm 0.03 ppm	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, and steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources such as active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low-sulfur fuel is not used.	Federal: Attainment/ Unclassified State: Attainment/ Unclassified
Lead ^{g,h}	Monthly calendar quarter Rolling 3-month average	1.5 µg/m ³ — —	— 1.5 µg/m ³ 0.15 µg/m ³	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes such as battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from gasoline might be present in soil along major roads.	Federal: Attainment/ Unclassified State: Attainment/ Unclassified
Sulfates	24 hours	25 µg/m ³	—	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes such as refineries, oil fields, and mines; natural sources such as volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Federal: NA State: Attainment/ Unclassified
Hydrogen sulfide	1 hour	0.03 ppm	—	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources such as volcanic areas and hot springs.	Federal: NA State: Attainment/ Unclassified

Pollutant	Averaging Time	State Standard ^a	Federal Standard ^b	Principal Health and Atmospheric Effects	Typical Sources	SFBAAB Attainment Status
Visibility-reducing particles ⁱ	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	—	Reduces visibility. Produces haze. Note: Not related to the Regional Haze program under the FCAA, which is oriented primarily toward visibility issues in national parks and other Class I areas.	See particulate matter above.	Federal: NA State: Attainment/ Unclassified
Vinyl chloride ^g	24 hours	0.01 ppm	—	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes.	Federal: NA State: Attainment/ Unclassified

(see footnotes on next page)

Sources: ARB (2016, 2018)

Note: $\mu\text{g}/\text{m}^3$ = microgram per cubic meter

^a California standards for O_3 , CO (except 8-hour Lake Tahoe), SO_2 (1- and 24-hour), NO_2 , and particulate matter (PM_{10} , $\text{PM}_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the CCR.

^b National standards (other than O_3 , particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10} , the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$ is equal to or less than 1. For $\text{PM}_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

^c On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

^d On December 14, 2012, the national annual $\text{PM}_{2.5}$ primary standard was lowered from $15 \mu\text{g}/\text{m}^3$ to $12.0 \mu\text{g}/\text{m}^3$. The existing national 24-hour $\text{PM}_{2.5}$ standards (primary and secondary) were retained at $35 \mu\text{g}/\text{m}^3$, as was the annual secondary standard of $15 \mu\text{g}/\text{m}^3$. The existing 24-hour PM_{10} standards (primary and secondary) of $150 \mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

^e To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

^f On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

^g The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

^h The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard ($1.5 \mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

ⁱ In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

California State Implementation Plan

The 1990 amendments to the FCAA set new deadlines for attainment based on the severity of the pollution problem and launched a comprehensive planning process for attaining the NAAQS. The promulgation of the national 8-hour O_3 standard and the $\text{PM}_{2.5}$ standards in 1997 resulted in additional statewide air quality planning efforts. In response to new federal regulations, SIPs also began to address ways to improve visibility in national parks and wilderness areas. SIPs are not single documents, but rather a compilation of new and previously submitted plans, programs, district rules, state regulations, and federal controls. Many of California’s SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes ARB the lead agency for all SIP-related purposes. Local air districts and other agencies prepare SIP elements and submit them to ARB for review and approval. ARB then forwards SIP

revisions to USEPA for approval and publication in the *Federal Register*. The CFR Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items included in the California SIP.

LOCAL REGULATIONS

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (such as factories) and indirect sources (such as traffic associated with new development), as well as monitoring ambient pollutant concentrations. BAAQMD's jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa—and parts of Solano and Sonoma Counties.

AIR QUALITY MANAGEMENT PLAN

BAAQMD's most recently adopted clean air plan is the April 2017 *Clean Air Plan*. To fulfill state O₃ planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of O₃ precursors—ROG and NO_x—and reduce transport of O₃ and its precursors to neighboring air basins. BAAQMD uses the *Clean Air Plan* to evaluate a project's potential cumulative air quality impacts. The BAAQMD CEQA Guidelines state that, "for any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impacts should be based on an evaluation of the consistency of the project with the local general plan and the general plan with the regional air quality plan." A proposed project would be consistent with the *Attainment Plan* if the project is consistent with assumptions used in the General Plan.

3.6.2 Climate Change Regulatory Setting

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. The 2013 EA provides a full analysis of climate change and GHG emissions in Section 3.8. Below is a summary of climate change as it applies to the information being assessed in this SEA.

Although climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are concerned primarily with the emissions of GHGs generated by human activity, GHGs including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

Two terms are typically used when discussing the effects of climate change: *greenhouse gas mitigation* and *adaptation*. *Greenhouse gas mitigation* is a term for reducing GHG emissions to reduce, or mitigate, the impacts of climate change. *Adaptation* refers to efforts to plan for and adapt to the effects of climate change, efforts such as adjusting transportation design standards to withstand more-intense storms and higher sea levels.

There are four primary strategies for reducing GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing the amount of travel activity, (3) transitioning to lower-GHG-emitting fuels, and (4) improving vehicle technologies and efficiency. To be most effective, all four strategies should be pursued cooperatively.

GHGs vary considerably in terms of their global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere (referred to as its *atmospheric lifetime*).

The GWP of each gas is measured relative to CO₂, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by 1 unit mass of the GHG to the ratio of heat trapped by 1 unit mass of CO₂ over a specified period. GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂e).

Table 3-35 shows the GWPs for each type of GHG. For example, SF₆ is 23,900 times more potent at contributing to global warming than is CO₂.

Table 3-35. Global Warming Potential of Greenhouse Gas

Gas	Atmospheric Lifetime (years)	GWP (100-year time horizon)
Carbon dioxide (CO ₂)	50–200	1
Methane (CH ₄)	12	21
Nitrous oxide (N ₂ O)	114	310
HFC-23	270	11,700
HFC-134a	14	1,300
HFC-152a	1.4	140
PFC: tetrafluoromethane (CF ₄)	50,000	6,500
PFC: hexafluoromethane (C ₂ F ₆)	10,000	9,200
Sulfur hexafluoride (SF ₆)	3,200	23,900

Source: Intergovernmental Panel on Climate Change (2007)

FEDERAL REGULATIONS

An update on the status of CEQ’s NEPA guidance is provided below. For a discussion of other relevant federal regulations refer to Section 3.8.1 (*Greenhouse Gas Emissions and Climate Change Regulatory Framework*) of the 2013 EA.

Council on Environmental Quality Draft NEPA Guidance on Consideration of Effects of GHG Emissions and Climate Change

On February 18, 2010, CEQ proposed for the first time draft guidance on how federal agencies could evaluate the effects of climate change and GHG emissions for NEPA documentation (CEQ 2010). Specifically, if a proposed action emits 25,000 MT of CO₂e or more on an annual basis, agencies could consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. CEQ does not propose this reference point as an indicator of a level of GHG emissions that may significantly affect the quality of the human environment, but notes that it serves as a minimum standard for reporting emissions under the CAA.

CEQ issued updated guidance on August 1, 2016, 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*; however, the guidance was withdrawn effective April 5, 2017, for further consideration pursuant to EO 13783 of March 28, 2017, "Promoting Energy Independence and Economic Growth." On June 21, 2019, CEQ submitted draft guidance entitled *Draft National Environmental Policy Act [NEPA] Guidance on Consideration of Greenhouse Gas [GHG] Emissions*, to the *Federal Register* for publication and public comment. The public comment period ended August 26, 2019.

CEQ's (2019) draft guidance is intended to assist Federal agencies in their consideration of GHG emissions when evaluating proposed major Federal actions in accordance with NEPA, and to facilitate more timely environmental reviews and permitting decisions for infrastructure projects requiring Federal agency Approvals (https://ceq.doe.gov/guidance/ceq_guidance_nepa-ghg.html).

Until the updated guidance is finalized and released by the CEQ, the 2010 guidance continues to be used in developing NEPA documentation. According to the 2010 guidance, in the analysis of the direct effects of a proposed action, CEQ proposes that it would be appropriate to: (1) quantify cumulative emissions over the life of the project; (2) discuss measures to reduce GHG emissions, including consideration of reasonable alternatives; and (3) qualitatively discuss the link between such GHG emissions and climate change. However, CEQ states that it is not currently useful for the NEPA analysis to attempt to link specific climatological changes or environmental impacts to proposed GHG emissions, as such direct linkage is difficult to isolate and to understand.

STATE REGULATIONS

Executive Order S-3-05 – Statewide GHG Emission Targets

On June 1, 2005, Governor Arnold Schwarzenegger issued EO S-3-05, which set the following GHG emission-reduction targets:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

This EO also directed the secretary of the California Environmental Protection Agency to oversee the efforts made to reach these targets and prepare biannual reports on the progress made toward meeting the targets and on the impacts to California related to global warming. The first such *Climate Action Team Assessment Report* was produced in March 2006 and has been updated every 2 years since then.

California Global Warming Solutions Act (Assembly Bill 32)

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and SF₆. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by 2020. ARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming to reduce emissions of GHGs. AB 32 also requires that, by January 1, 2008, ARB must determine what the statewide GHG emissions level was in 1990, and it must approve a statewide GHG emissions limit so that it can be applied to the 2020 benchmark. ARB approved a 1990 GHG emissions level of 427 million MT of CO₂e, on December 6, 2007, in its staff report. Therefore, in 2020, emissions in California are required to be at or below 427 million MT of CO₂e.

Under the “business as usual” (BAU) scenario established in 2008, statewide emissions were increasing at a rate of about 1 percent per year. It was estimated that the 2020 estimated BAU of 596 million MT of CO₂e would have required a 28 percent reduction to reach the 1990 level of 427 million MT of CO₂e.

Executive Order B-30-15

On April 20, 2015, Governor Edmund G. Brown, Jr., signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The governor’s EO aligns California’s GHG-reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed its legislated target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32). California’s new emission-reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the United States to limit global warming below 2 degrees Celsius (°C), the warming threshold at which there will likely be major climate disruptions, such as super droughts and rising sea levels.

Senate Bill 32

SB 32 was signed into law on September 8, 2016, and expands on AB 32 to reduce GHG emissions. SB 32 sets into law the mandated GHG emissions target of 40 percent below 1990 levels by 2030 written into EO B-30-15.

Climate Change Scoping Plan

The scoping plan released by ARB in 2008 described the State's strategy to achieve the AB 32 goals. This scoping plan, developed by ARB in coordination with the Climate Action Team, proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health. It was adopted by ARB at its December 2008 meeting. According to the scoping plan, the 2020 target of 427 million MT of CO₂e requires the reduction of 169 million MT of CO₂e, or approximately 28.3 percent, from the state's projected 2020 BAU emissions level of 596 million MT of CO₂e.

In August 2011, the scoping plan was reapproved by the Board and includes the final supplement to the *Scoping Plan Functional Equivalent Document*. This document includes expanded analysis of project alternatives, as well as updates the 2020 emission projections in light of the current economic forecasts. Considering the updated 2020 BAU estimate of 507 million MT of CO₂e, only a 16 percent reduction below the estimated new BAU levels would be necessary to return to 1990 levels by 2020. The 2011 scoping plan expands the list of 9 early action measures into a list of 39 recommended actions.

In May 2014, ARB developed, in collaboration with the Climate Action Team, the *First Update to California's Climate Change Scoping Plan*, which shows that California is on track to meet the near-term 2020 GHG limit and is well-positioned to maintain and continue reductions beyond 2020 as required by AB 32. In accordance with the United Nations Framework Convention on Climate Change, ARB in its climate change programs is beginning to transition to the use of the 100-year GWPs in the *Fourth Assessment Report* from the United Nations Intergovernmental Panel on Climate Change. ARB has recalculated the 1990 GHG emissions level with the *Fourth Assessment Report* GWPs to be 431 million MT of CO₂e; therefore, the 2020 GHG emissions limit established in response to AB 32 is now slightly higher than the 427 million MT of CO₂e in the initial *Scoping Plan*.

In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions-reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation AB 197, which provides additional direction for developing the *Scoping Plan*. ARB is moving forward with a second update to the *Scoping Plan* to reflect the 2030 target set by EO B-30-15 and codified by SB 32. According to the 2017 *Scoping Plan*, the 2030 target of 260 million MT of CO₂e requires the reduction of 129 million MT of CO₂e, or about 33.2 percent, from the state's projected 2030 BAU emissions level of 389 million MT of CO₂e.

Assembly Bill 1493 – Light-duty Vehicle GHG Emissions Standards

AB 1493 (Pavley) requires ARB to develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state." On September 24, 2009, ARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's

enforcement of AB 1493 (starting in 2009) while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal corporate average fuel economy rules for passenger vehicles. In January 2012, ARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars.

Executive Order S-01-07

This EO, signed by Governor Arnold Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It orders that a low-carbon fuel standard for transportation fuels be established for California and directs ARB to determine whether such a standard can be adopted as a discrete early-action measure pursuant to AB 32. ARB approved the low-carbon fuel standard as a discrete early-action item with a regulation adopted and implemented in April 2010. On December 29, 2011, District Judge Lawrence O'Neill in the Eastern District of California issued a preliminary injunction blocking ARB from implementing the standard for the remainder of the *Rocky Mountain Farmers Union* litigation. The injunction was lifted in April 2012 so that ARB can continue enforcing the low-carbon fuel standard pending ARB's appeal of the federal district court ruling.

Renewable Portfolio Standard

The Renewable Portfolio Standard (RPS) promotes diversification of the state's electricity supply and decreased reliance on fossil fuel energy sources. Originally adopted in 2002 with a goal to achieve a 20 percent renewable energy mix by 2020 (referred to as the "initial RPS"), the goals have been accelerated and increased by EOs S-14-08 and S-21-09 to a goal of 33 percent by 2020. In April 2011, Governor Jerry Brown signed SB 2 (1X) codifying California's 33 percent RPS goal; Section 399.19 requires the California Public Utilities Commission, in consultation with the California Energy Commission, to report to the Legislature on the progress and status of RPS procurement and other benchmarks. The purpose of the RPS on full implementation is to provide 33 percent of the state's electricity needs through renewable energy sources. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.

The RPS is included in ARB's *Scoping Plan* list of GHG-reduction measures to reduce energy sector emissions. It is designed to accelerate the transformation of the electricity sector through such means as investing in energy transmission infrastructure and systems to allow integration of large quantities of intermittent wind and solar generation. Increased use of renewables would decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector. In 2008, as part of the *Scoping Plan* original estimates, ARB estimated that fully achieving the RPS would decrease statewide GHG emissions by 21.3 million MT of CO₂e. In 2010, ARB revised this number upward to 24.0 million MT of CO₂e. The state's RPS was further augmented through the adoption of SB 350 and SB 100.

Senate Bill 350

SB 350 was signed into law in September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

SB 100, adopted in September 2018, requires the state's retail electricity to achieve a 60 percent renewable energy portfolio by 2030 (an increase from 50 percent set forth by SB 350), and 100 percent carbon free renewable energy portfolio by 2045.

Senate Bill 375 – Regional Emissions Targets

SB 375 was signed into law in September 2008 and requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan. The purpose of SB 375 is to align regional transportation planning efforts, regional GHG reduction targets, and fair-share housing allocations under state housing law. SB 375 requires metropolitan planning organizations to adopt a Sustainable Communities Strategy or Alternative Planning Strategy to address GHG reduction targets from cars and light-duty trucks in the context of that metropolitan planning organization's Regional Transportation Plan.

State of California Building Energy Efficiency Standards (Title 24, Part 6)

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (24 CCR Part 6) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The premise for the standards is that energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for space and water heating) causes GHG emissions.

The California Energy Commission (CEC) adopted new 2019 Building Energy Efficiency Standards effective January 1, 2020. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The most significant efficiency improvements to the residential Standards include the introduction of photovoltaic into the prescriptive package, improvements for attics, walls, water heating, and lighting. Future standards are expected to result in zero net energy for newly constructed commercial buildings (CEC 2018).

Short-lived Climate Pollutant Reduction Strategy

This final proposed short-lived climate pollutant reduction strategy was developed pursuant to SB 605 and SB 1383 and lays out a range of options to accelerate short-lived climate pollutant emission reductions in California, with options including regulations, incentives, and other market-supporting activities. The strategy was integrated into the 2017 *Climate Change Scoping Plan Update*, which incorporated input

from a wide range of stakeholders to develop a comprehensive plan for achieving the SB 32 statewide 2030 GHG limit of 40 percent below 1990 levels. The process for updating the *Scoping Plan* began in the fall of 2015 and was completed in 2017.

The following goals are achievable through implementation of the short-lived climate pollutant reduction strategy:

- Achieve the following reductions by 2030 (from 2013 levels):
 - 50 percent for anthropogenic black carbon
 - 40 percent for CH₄
 - 40 percent for HFCs
- Convert manure and organic wastes into valuable energy and soil-amendment products
- Reduce disposal of edible foods by diverting them to food banks and other outlets
- Reduce harmful emissions from residential wood stoves
- Accelerate the reduction of the fastest-growing source of GHG emissions by building on global HFC phasedown agreements

3.6.3 Affected Environment

The qualitative affected environment description of air quality, GHG emissions, and climate change is provided in Section 3.7.2 (*Air Quality Affected Environment*) and Section 3.8.2 (*Greenhouse Gas Emissions and Climate Change Affected Environment*) of the 2013 EA. However, more recent results from air quality pollutant monitoring are provided in Table 3-36 and were used to provide baseline for this updated assessment. A summary of the affected environment, as it applies to this SEA, is provided below.

Climate

San Francisco Bay Area topography is characterized by complex terrain consisting of coastal mountain ranges, inland valleys, and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the Bay Area. The greatest distortion occurs when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summer.

The only major break in California's Coast Range occurs in the Bay Area. Here the Coast Range splits into western and eastern ranges. Between the two ranges lies San Francisco Bay. The gap in the western coast range is known as the Golden Gate, and the gap in the eastern coast range is the Carquinez Strait. These gaps allow air to pass into and out of the Bay Area and the Central Valley.

During the summer, the large-scale meteorological condition that dominates the West Coast is a semipermanent high-pressure cell centered over the northeastern Pacific Ocean. This high-pressure cell keeps storms from affecting the California coast. Hence,

the Bay Area experiences little precipitation in summer. Winds tend to blow on shore from the north and northwest.

The steady northwesterly flow induces upwelling of cold water from below. This upwelling produces a band of cold water off the California coast. When air approaches the California coast, already cool and moisture-laden from its long journey over the Pacific Ocean, it is further cooled as it crosses this bank of cold water. This cooling often produces condensation resulting in a high incidence of fog and stratus clouds along the northern California coast in summer.

Generally in the winter, the Pacific high weakens and shifts south, winds tend to flow offshore, upwelling ceases, and storms occur. During the winter rainy periods, inversions (layers of warmer air over colder air) are weak or nonexistent, winds are usually moderate, and air pollution potential is low. The Pacific high does periodically become dominant, however, bringing strong inversions, light winds, and high pollution potential.

Summertime temperatures in the Bay Area are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold ocean-bottom water along the coast. Thus, on summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit (°F) cooler than temperatures 15 to 20 miles inland. At night, the contrast between the coast and inland temperatures is usually less than 10°F.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime, the temperature gradient between the coast and inland areas is small, whereas at night the temperature gradient is large.

Monitored Air Quality Pollutants

The closest monitoring station to the project area is the Oakland West Monitoring Station. This station monitors CO, O₃, PM_{2.5}, SO₂, and NO₂. The closest station that monitors PM₁₀ is the San Francisco Station. Table 3-36 lists pollutant levels, the state and federal standards, and the number of exceedances recorded at these stations from 2015 to 2017. These pollutants are discussed in more detail after the table.

Table 3-36. Ambient Air Quality Monitoring Concentrations at the Oakland West Monitoring Station and San Francisco Station

Pollutant	Pollutant Concentration and Standard	Maximum Concentration		
		2015	2016	2017
Carbon monoxide	Maximum 1-hour concentration (ppm)	4.7	2.5	6.0
	Days >20 ppm (state 1-hour standard)	0	0	0
	Days >35 ppm (federal 1-hour standard)	0	0	0
	Maximum 8-hour concentration (ppm)	2.6	2.2	2.1
	Days >9 ppm (state 8-hour standard)	0	0	0
	Days >9 ppm (federal 8-hour standard)	0	0	0

Pollutant	Pollutant Concentration and Standard	Maximum Concentration		
		2015	2016	2017
Ozone	Maximum 1-hour concentration (ppm)	0.091	0.065	0.087
	Days >0.09 ppm (state 1-hour standard)	0	0	0
	Maximum 8-hour concentration (ppm)	0.064	0.052	0.068
Nitrogen dioxide	Days >0.070 ppm (state 8-hour standard)	0	0	0
	Days >0.070 ppm (federal 8-hour standard)	0	0	0
	Maximum 1-hour concentration (ppm)	0.057	0.049	0.052
	Days >0.18 ppm (state 1-hour standard)	0	0	0
	Days >0.10 ppm (federal 1-hour standard)	0	0	0
	Annual arithmetic mean (ppm)	0.014	0.012	0.013
Coarse particulate matter (PM ₁₀)	Exceed 0.030 ppm? (state annual standard)	No	No	No
	Exceed 0.053 ppm? (federal annual standard)	No	No	No
	Maximum 24-hour concentration (µg/m ³)	44.7	35.7	75.9
Fine particulate matter (PM _{2.5})	Days >50 µg/m ³ (state 24-hour standard)	0	0	2
	Days >150 µg/m ³ (federal 24-hour standard)	0	0	0
	Annual arithmetic mean (µg/m ³)	9.8	8.8	11.0
	Exceed 20 µg/m ³ ? (state annual standard)	No	No	No
	Maximum 24-hour concentration (µg/m ³)	38.7	23.9	56.0
	Days >35 µg/m ³ (federal 24-hour standard)	3	0	7
	Annual arithmetic mean (µg/m ³)	10.8	9.5	10.6
	Exceed 12 µg/m ³ ? (state annual standard)	No	No	No
	Exceed 12 µg/m ³ ? (federal annual standard)	No	No	No

Carbon Monoxide

CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. CO is a nonreactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicle traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. As identified in Table 3-36, the CO concentrations in the project area have not exceeded the federal or state standards in the past 3 years.

Ozone

O₃ is a colorless gas that is formed in the atmosphere when ROGs, which include VOCs, and NO_x react in the presence of ultraviolet sunlight. O₃ is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of ROG and NO_x, the components of O₃, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O₃ formation. Ideal conditions occur during the summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is automobiles. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in southern California can cause breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections,

inflammation of the lung tissue, and some immunological changes. As identified in Table 3-36, the 1-hour O₃ standard was exceeded at the Oakland West Monitoring Station once in 2015.

Nitrogen Dioxide

NO₂, like O₃, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide and atmospheric oxygen. Nitric oxide and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation. NO₂ also contributes to the formation of PM₁₀. High concentrations of NO₂ can result in a brownish-red cast to the atmosphere with reduced visibility and can cause breathing difficulties. As identified in Table 3-36, the NO₂ concentrations in the project area have not exceeded the federal or state standards in the past 3 years.

Oxides of Sulfur

SO₂ is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. The main sources of SO₂ are coal and oil used in power plants and industries. Generally, the highest levels of SO₂ are found near large industrial complexes. In recent years, SO₂ concentrations have been reduced by the increasingly stringent controls placed on stationary-source emissions of SO₂ and limits on the sulfur content of fuels. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished lung function in children.

Coarse Particulate Matter (PM₁₀)

Particulate matter pollution consists of very small liquid and solid particles floating in the air, particles that can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Inhalable particulate matter, or PM₁₀, is about 1/7 the thickness of a human hair. Major sources of PM₁₀ include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and burning of brush and waste; industrial sources; windblown dust from open land; and atmospheric chemical and photochemical reactions. When inhaled, PM₁₀ particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM₁₀ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. As identified in Table 3-36, the state PM₁₀ standards were exceeded at the San Francisco Station twice in 2017. The federal standards were not exceeded in the last 3 years.

Fine Particulate Matter (PM_{2.5})

Fine particulate matter, or PM_{2.5}, is roughly 1/28 the diameter of a human hair. PM_{2.5} results from fuel combustion (such as from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM_{2.5} can be formed in the atmosphere from gases, such as SO₂, NO_x, and VOC. Very small particles of substances such as lead, sulfates, and nitrates can damage lungs directly. These substances can be absorbed into the bloodstream and cause damage elsewhere in the

body. These substances can also transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility. As identified in Table 3-36, the $PM_{2.5}$ standards were exceeded at the Oakland West Monitoring Station in 2 of the past 3 years.

Volatile Organic Compounds or Reactive Organic Gases

VOCs are carbon-containing compounds that evaporate into the air. VOCs contribute to the formation of smog and/or can be toxic. VOCs often have an odor, and examples include gasoline, alcohol, and the solvents used in paints. BAAQMD does not directly monitor VOCs. There are no specific state or federal VOC thresholds, since they are regulated by individual air districts as O_3 precursors.

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive receptors that are in proximity to localized sources of toxics, particulate matter, and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The closest sensitive land uses to the project area are recreational fields located within the former NAS Alameda; they are about 1,200 to 1,500 feet east of the project site. The closest active residential and school uses are over a mile to the east.

3.6.4 Methods and Thresholds

The air quality analyses in this SEA evaluates the proposed project's short-term construction and long-term operation emissions using the methodologies and significance thresholds described in this section.

Criteria Air Pollutants

Emissions of criteria air pollutants were estimated using existing conditions information, project construction details, and project operations information, as well as a combination of emission factors from the following sources:

- CalEEMod (Version 2016.3.2) emission model for estimating exhaust emissions from off-road construction equipment and on-road motor vehicles
- CalEEMod (Version 2016.3.2) emission model for calculating long-term mobile, energy, and area source emissions

Federal General Conformity

As discussed in Section 3.6.1 (*Air Quality Regulatory Setting*), the emissions thresholds that trigger the requirements of the General Conformity Rule for federal actions emitting

nonattainment or maintenance pollutants, or their precursors, are called *de minimis* levels. The general conformity *de minimis* thresholds are defined in 40 CFR Section 93.153(b). The federal General Conformity Rule does not apply to federal actions in areas designated as nonattainment for only the CAAQS.

Based on the attainment status listed in Table 3-34, the *de minimis* thresholds that apply to the SFBAAB project area are listed in Table 3-37. These thresholds apply to all direct and indirect emissions generated during construction and operation of a project. The SFBAAB is currently designated as attainment/unclassified for the PM₁₀ and CO NAAQS. Therefore, there are no *de minimis* thresholds for those pollutants.

Table 3-37. De Minimis Thresholds for the San Francisco Bay Area Air Basin

Pollutant	Threshold (tons/year)
CO	NA
NO _x	100
PM ₁₀	NA
PM _{2.5}	100
VOC	100

Source: USEPA (2018b)

Greenhouse Gas Emissions

Although the federal General Conformity *de minimis* thresholds were used to assess air quality affects in this SEA, GHG emissions for the proposed project were quantified and results are included below in Section 3.6.5 (see also Appendix F, *Air Quality and Greenhouse Gas Calculations*, for detailed modeling output). The quantification was completed to comply with CEQ guidance (see Section 3.6.2) and to enable state and local agencies to comply with state requirements for public review of potential impacts.

Odor Impact Thresholds

The thresholds of significance for odor impacts are qualitative in nature. A project that would site a new source of odors should consider the screening level distances and the complaint history of the odor sources.

- Projects that would site a new odor source farther than the applicable screening distance shown in Table 3-38 from an existing receptor would not likely cause a significant odor impact.
- A type of odor source with five or more confirmed complaints in the new source area per year averaged over 3 years is considered to have a significant impact on receptors within the screening distance shown in Table 3-38.

Table 3-38 presents odor-screening distances recommended by BAAQMD for a variety of land uses. Projects that would site a new odor source or a new receptor farther than the applicable screening distance shown in the table from an existing receptor or odor source, respectively, would not likely cause a significant odor impact. The odor screening

distances in the table should not be used as absolute screening criteria, rather as information to consider along with the odor parameters and complaint history.

Table 3-38. BAAQMD Odor-Screening Distances

Land Use or Type of Operation	Project Screening Distance (miles)
Wastewater treatment plant	2
Wastewater pumping facilities	1
Sanitary landfill	2
Transfer station	1
Composting facility	1
Petroleum refinery	2
Asphalt batch plant	2
Chemical manufacturing	2
Fiberglass manufacturing	1
Painting/coating operations	1
Rendering plant	2
Coffee roaster	1
Food processing facility	1
Confined animal facility/feed lot/dairy	1
Green waste and recycling operations	1
Metal smelting plants	2

Source: BAAQMD (2017)

3.6.5 Environmental Consequences

Air pollutant emissions caused by the proposed project, such as fugitive dust from site preparation and grading and emissions from equipment exhaust, would occur over the short term from construction activities. There would be long-term regional emissions from project-related vehicle trips and stationary source emissions because of energy consumption, such as natural gas and electricity use by the proposed project.

Air Quality Emissions

Construction Impacts

Project construction activities could generate air pollutant emissions and dust from equipment used during construction. Likely air pollutants caused by construction include PM dust, criteria pollutants from fuel combustion, and diesel PM. Construction activities at individual sites in the project area would cause short-term increases in emissions from the operation of construction equipment.

EQUIPMENT EXHAUST AND RELATED CONSTRUCTION ACTIVITIES

The construction emissions for typical construction equipment and activities were calculated using the CalEEMod model. The total exhaust emissions generated during each year of the construction period are listed in Table 3-39 and Table 3-40 for the peak daily and annual conditions, respectively, for the project site. See Appendix F for details on the analysis. As identified in Table 3-39, the daily construction emissions would not exceed BAAQMD's thresholds. Also, as shown in Table 3-40, the annual construction emissions would not exceed the *de minimis* criteria for the SFBAAB.

Table 3-39. Daily Construction Emissions (pounds per day)

Year	CO	ROG	NO _x	PM ₁₀	PM _{2.5}
2021	21.6	3.9	40.5	20.3	11.9
2022	20.0	2.2	21.1	2.0	1.1
2023	19.5	2.0	18.6	1.9	1.0
2024	21.5	17.5	18.9	2.1	1.0
2025	21.2	17.4	17.8	2.0	0.9
Peak day	21.6	17.5	40.5	20.3	11.9
BAAQMD threshold	NA	54.0	54.0	82.0	54.0
Exceedance?	NA	No	No	No	No

Table 3-40. Annual Construction Emissions (tons per year)

Year	CO	ROG	NO _x	PM ₁₀	PM _{2.5}
2021	2.7	0.4	4.3	1.3	0.8
2022	2.6	0.3	2.8	0.3	0.1
2023	2.5	0.3	2.4	0.2	0.1
2024	2.6	1.0	2.4	0.2	0.1
2025	0.9	0.1	0.5	0.0	0.0
<i>De minimis</i> criteria	NA	100	100	NA	100
Exceedance?	NA	No	No	NA	No

FUGITIVE DUST

Fugitive-dust emissions are generally associated with land clearing, exposure, and cut-and-fill operations. Dust generated daily during construction would vary substantially depending on the level of activity, the specific operations, and weather conditions. For mitigation of fugitive-dust emissions, BAAQMD recommends implementing BMPs as a pragmatic and effective approach to controlling fugitive-dust emissions (BAAQMD 2017). BAAQMD states that individual measures have been shown to reduce fugitive dust by anywhere from 30 to more than 90 percent. Therefore, these BMPs would ensure that the project's fugitive-dust emissions would remain below a level of significance.

GREENHOUSE GAS EMISSIONS

Unlike air quality analysis, which is a per-day threshold, the analysis of GHG emissions is an aggregate quantity requiring summation over the total estimated number of work days (that is, the total number of days that any construction grading vehicle would have an engine running).

Construction of the proposed project would cause temporary emissions from diesel engine combustion from mass grading and from site preparation construction equipment. These engines are assumed to be running at the correct fuel-to-air ratios (the ratio at which complete combustion of the diesel fuel occurs). Construction-related GHG emissions include site preparation, excavation, and associated construction of the proposed facilities.

The most recent version of the CalEEMod model (version 2016.3.2) was used to calculate the proposed project's construction emissions. Table 3-41 summarizes the expected GHG emissions from construction activities (see Appendix F for details of analysis). As shown, construction of the proposed project would generate 2,349 MT of CO₂e.

Table 3-41. Construction Greenhouse Gas Emissions

Year	Pollutant Emissions (MT per year)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
2021	497.5	0.14	0.00	501.0
2022	568.5	0.08	0.00	570.6
2023	560.2	0.08	0.00	562.3
2024	579.2	0.08	0.00	581.2
2025	133.3	0.04	0.00	134.2
Total	2,338.7	0.42	0.00	2,349.3

ODORS

Construction of the proposed project could cause emission of odors from construction equipment and vehicles (for example, from diesel exhaust). It is anticipated that these odors would be short term, limited in extent at any given time, and distributed throughout the project area during the duration of construction. Therefore, odors resulting from construction of the proposed project would not affect a substantial number of people.

Operation Impacts

Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources involving any project-related changes. The proposed project would have long-term operational air quality impacts from mobile-source emissions from vehicle trips in the project area and stationary-source emissions from on-site energy consumption. However, as summarized below, these would not exceed thresholds defined by the BAAQMD.

ON-ROAD, ENERGY, AND AREA SOURCE EMISSIONS

The CalEEMod model was used to calculate the operational emissions from the proposed project. Table 3-42 and Table 3-43 identify the peak daily emissions from operations of the proposed project in 2025 and 2040, respectively. Table 3-44 and Table 3-45 identify the annual emissions from operations of the proposed project in 2025 and 2040, respectively. As identified in Table 3-42 and Table 3-43, the daily operational emissions would not exceed BAAQMD's thresholds. As identified in Table 3-44 and Table 3-45, the annual operational emissions would not exceed the *de minimis* criteria for the SFBAAB.

Table 3-42. 2025 Daily Operational Emissions

Source	CO	NO _x	ROG	PM ₁₀	PM _{2.5}
Area	0.02	0.00	4.14	0.00	0.00
Energy	0.71	0.85	0.09	0.06	0.06
Mobile	22.09	9.01	2.33	8.15	2.22
Total	22.82	9.85	6.56	8.21	2.29
BAAQMD threshold	NA	54.0	54.0	82.0	54.0
Exceedance?	NA	No	No	No	No

Note: Columns might not add up due to rounding.

Table 3-43. 2040 Daily Operational Emissions

Source	CO	NO _x	ROG	PM ₁₀	PM _{2.5}
Area	0.02	0.00	4.14	0.00	0.00
Energy	0.71	0.85	0.09	0.06	0.06
Mobile	13.38	7.73	1.33	8.26	2.23
Total	14.11	8.57	5.56	8.32	2.29
BAAQMD threshold	NA	54.0	54.0	82.0	54.0
Exceedance?	NA	No	No	No	No

Note: Columns might not add up due to rounding.

Table 3-44. 2025 Annual Operational Emissions

Source	CO	NO _x	ROG	PM ₁₀	PM _{2.5}
Area	0.00	0.00	0.75	0.00	0.00
Energy	0.13	0.15	0.02	0.01	0.01
Mobile	3.89	1.68	0.37	1.43	0.39
Total	4.02	1.84	1.14	1.44	0.40
De minimis criterion	NA	100	100	NA	100
Exceedance?	NA	No	No	NA	No

Note: Columns might not add up due to rounding.

Table 3-45. 2040 Annual Operational Emissions

Source	CO	NO _x	ROG	PM ₁₀	PM _{2.5}
Area	0.00	0.00	0.75	0.00	0.00
Energy	0.13	0.15	0.02	0.01	0.01
Mobile	2.34	1.42	0.21	1.45	0.39
Total	2.47	1.58	0.98	1.46	0.40
De minimis criterion	NA	100	100	NA	100
Exceedance?	NA	No	No	NA	No

Note: Columns might not add up due to rounding.

LONG-TERM MICROSCALE (CARBON MONOXIDE HOT SPOT) ANALYSIS

Vehicle trips associated with the proposed project would contribute to congestion at intersections and on roads in the project area. Local air quality impacts would occur when emissions from vehicle traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested road or intersection can reach unhealthful levels, affecting local sensitive receptors (residents, schoolchildren, the elderly, hospital patients, etc.).

According to BAAQMD, the proposed project would have a less-than-significant impact under CEQA on local CO concentrations if the following screening criteria are met:

1. The proposed project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, a regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing of traffic is substantially limited (for example, in tunnels, in parking garages, on bridge underpasses, in natural or urban street canyons, or on below-grade roads).

The proposed project would not conflict with ACTC's program for designated roads or highways, a regional transportation plan, or other agency plans, since the proposed project would not cause the LOS to significantly deteriorate on any regional road. In addition, the proposed project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. Finally, the proposed project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing of traffic is substantially limited. Therefore, there would be no project-related impacts on CO concentrations if the proposed project were constructed on the project site.

GREENHOUSE GAS EMISSIONS

The operational GHG emission estimates were also calculated using CalEEMod. The following activities associated with the proposed project could directly or indirectly contribute to GHG emissions:

- **Gas, Electricity, and Water Use.** Use of natural gas emits two GHGs: CH₄ (the major component of natural gas) and CO₂ from the combustion of natural gas. Electricity use can produce GHGs if the electricity is generated by combusting fossil fuel. Annual electricity emissions were estimated using the reported GHG emissions per kilowatt-hour for Southern California Edison; this supplier would provide electricity for the proposed project.
- **Solid Waste Disposal.** Solid waste generated by the proposed project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste-management practice, releases CH₄ from the anaerobic decomposition of organic materials. CH₄ is 21 times more potent a GHG than CO₂. However, landfill CH₄ can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use.** Transportation associated with the proposed project would cause GHG emissions from the combustion of fossil fuels during vehicle trips. The proposed project would cause GHG emissions through the vehicle traffic generated by the proposed project.
- **Net GHG Benefits of Wetland Mitigation.** This project required mitigation for replacement of wetlands that would be removed, and also includes enhancement for wetlands that occur adjacent to the proposed wetland mitigation creation site. A new tidal salt marsh would be created on 7.3 acres, enhancement of 13.2 acres of existing marsh/salina is planned, and 3.6 acres of salt marsh mitigation credits would be purchased (in San Francisco Bay).

Using estimation methods developed by the ARB for CDFW, the net GHG benefits of wetland mitigation for this project were calculated. This estimation method was developed to identify the net GHG benefit and co-benefits from projects receiving monies from the Greenhouse Gas Reduction Fund. The methodology would be generally applicable to wetland mitigation projects. The calculator tool uses calculations to estimate the net carbon sequestration in soil from wetland restoration or enhancement to quantify the GHG emission changes from wetland restoration or enhancement.

Wetland mitigation projects achieve a net GHG benefit by sequestering carbon in soil and in trees, and by avoiding nitrous oxide emissions. The results are reported in Total Wetlands GHG Benefit (MT CO₂e) over a 50-year period.

Using the ARB calculator, below are the estimates of the GHG benefits of wetland restoration that would result from implementation of this project:

- The 7.3 acres of new tidal salt marsh would yield carbon sequestration of 3,639 MT CO₂e.
- Of the 13.2 acres to be enhanced, 10.5 acres are marsh (10.1 tidal and 0.4 seasonal acres of existing freshwater marsh/salina). The balance of 2.7 acres would be a transition zone.
 - This acreage of freshwater marsh would be converted to salt marsh and nonnative plants removed. An assumption of 4 months duration per year for active sequestration was made for 0.4 acre of seasonal wetlands.
 - To be conservative and estimate a net benefit of wetland enhancement, a deduction was taken for the baseline amount of existing carbon sequestration at the current freshwater marsh. The baseline was calculated as carbon sequestration from restoration of a moderately degraded freshwater marsh.
 - This was calculated as 4,707 MT CO₂e (new tidal marsh) less 303 MT CO₂e (estimate of existing carbon sequestration at current freshwater marsh) to yield 4,404 MT CO₂e.
- Purchasing mitigation credits in San Francisco Bay marsh of 3.6 acres yield carbon sequestration of 1,608 MT CO₂e.
- Total estimated wetlands GHG benefit for this project is the sum of 3,639, 4,404, and 1,608, or 9,651 MT CO₂e over a 50-year period. On an annual basis, the wetlands GHG benefit would be 193 MT CO₂e.
- **Combined Emissions.** Table 3-46 and Table 3-47 show the GHG emissions associated with the level of development in 2025 and 2040, respectively (see Appendix F for detailed analysis). As noted in Section 3.6.4, the federal General Conformity *de minimis* thresholds were used to assess air quality affects in this SEA, GHG emissions for the proposed project are presented here to comply with CEQ guidance (see Section 3.6.2) and to enable state and local agencies to comply with state requirements for public review of potential impacts as defined under CEQA.

Table 3-46. 2025 Annual Greenhouse Gas Emissions

Source	Pollutant Emissions (MT per year)					
	Bio-CO ₂	NBio-CO ₂	CO ₂	CH ₄	N ₂ O	CO ₂ e
Operational Emissions						
Area sources	0.0	0.0	0.0	0.0	0.0	0.0
Energy sources	0.0	759.9	759.9	0.03	0.01	763.2
Mobile sources	0.0	1,383.7	1,383.7	0.05	0.0	1,384.9
Waste sources	348.7	0.0	348.7	20.6	0.0	863.9
Water use	6.6	134.1	140.6	0.7	0.02	162.8
Wetlands	—	—	—	—	—	-193.0
Total operational emissions	355.3	2,277.7	2,633.0	21.4	0.03	2,981.9

Note: Columns might not add up due to rounding.

Table 3-47. 2040 Annual Greenhouse Gas Emissions

Source	Pollutant Emissions (MT per year)					
	Bio-CO ₂	NBio-CO ₂	CO ₂	CH ₄	N ₂ O	CO ₂ e
Operational Emissions						
Area sources	0.0	0.0	0.0	0.0	0.0	0.0
Energy sources	0.0	759.9	759.9	0.03	0.01	763.2
Mobile sources	0.0	1,169.5	1,169.5	0.04	0.0	1,170.4
Waste sources	348.7	0.0	348.7	20.6	0.0	863.9
Water use	6.6	134.1	140.6	0.7	0.02	162.8
Wetlands	—	—	—	—	—	-193.0
Total operational emissions	355.3	2,063.5	2,418.8	21.4	0.03	2,767.4

Note: Columns might not add up due to rounding.

ODORS

The operational land uses proposed at the project area are not land uses that would typically generate substantial concentrations of odors. Therefore, it is unlikely that the operation would expose sensitive receptors to substantial odor concentrations. Therefore, odors resulting from long-term operations of the proposed project would not affect a substantial number of people.

3.6.6 Standard Conditions

For all proposed projects, BAAQMD recommends implementing all basic construction mitigation measures listed in Table 3-48, whether or not construction-related emissions would exceed applicable thresholds of significance. Therefore, the listed measures have been incorporated into the proposed project.

Table 3-48. Basic Construction Mitigation Measures Recommended for All Projects

No.	Mitigation Measures
1	All exposed surfaces (for example, parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
2	All haul trucks transporting soil, sand, or other loose material off-site will be covered.
3	All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4	All vehicle speeds on unpaved roads will be limited to 15 mph.
5	All roads, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.

No.	Mitigation Measures
6	Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage will be provided for construction workers at all access points.
7	All construction equipment will be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8	A publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints will be posted. This person will respond and take corrective action within 48 hours. The Air District's phone number will also be visible to ensure compliance with applicable regulations.

Source: BAAQMD (2017)

3.7 Hazards and Hazardous Substances

3.7.1 Regulatory Setting

Federal Regulations

For a discussion of federal regulations refer to Section 3.10.1 (*Hazards and Hazardous Substances Regulatory Framework*) of the 2013 EA. Below is a summary of the State regulatory guidance.

State Regulations

In January 1996, the California Environmental Protection Agency adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency is the local agency that is responsible for the implementation of the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. In Alameda, the Alameda County Department of Environmental Health is the designated Certified Unified Program Agency for all businesses.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

Hazardous Waste Handling

The California Environmental Protection Agency/DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely. Under the federal RCRA, described in Table 4.J-1, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In 1992, USEPA authorized DTSC to be the primary authority for enforcing RCRA hazardous waste requirements in California. DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Hazardous Materials Transportation

The State of California has adopted DOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the CCR. In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California. The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and Caltrans.

Occupational Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the CFR. Cal/OSHA standards are generally more stringent than federal regulations. Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that Safety Data Sheets be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

State laws, like federal laws, include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. Specific, more detailed training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR. Emergency equipment and supplies, such as fire extinguishers, safety showers, and eye washes, must also be provided and maintained in accessible places.

Cal/OSHA (8 CCR), like the federal Occupational Safety and Health Administration (29 CFR) includes extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials (ACMs), including maintenance, renovation, and demolition. These regulations are also designed to ensure that persons working near the maintenance, renovation, or demolition activity are not exposed to asbestos.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies, including California Environmental Protection Agency, California Highway Patrol, CDFG, the San Francisco Bay RWQCB, and the Alameda County Fire Department, which provides first response capabilities, if needed, for hazardous materials emergencies within the project site vicinity.

Structural and Building Components

Implementation of the project would include demolition of structures which, due to their age, may contain ACMs, PCBs, or lead and lead-based paint. In addition, removal of existing aboveground or underground storage tanks may be required.

Asbestos

State laws and regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. Asbestos represents a human health risk when asbestos fibers become friable (easily crumbled or powdery) and potentially airborne, and can be inhaled into the lungs.

The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. BAAQMD Regulation 11, Rule 22 applies to asbestos. Cal/OSHA regulates asbestos removal to ensure the health and safety of workers removing ACMs and also must be notified of asbestos abatement activities.

Polychlorinated Biphenyls (PCBs)

As previously discussed, PCBs are organic oils that were formerly used in many types of electrical equipment and in fluorescent lighting ballasts. PCBs are highly persistent in the environment and are toxic. In 1979, USEPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (40 CFR). Fluorescent lighting ballasts that contain PCBs, regardless of size and quantity, are regulated as hazardous waste and must be transported and disposed of as hazardous waste.

Lead and Lead-Based Paint

The CCR, Title 22, considers waste soil with concentrations of lead to be hazardous if it exceeds a total concentration of 1,000 ppm or a soluble concentration of 5 ppm. Both the federal and California OSHAs regulate all worker exposure during construction activities that involve lead-based paint. The Interim Final Rule found in 29 CFR Part 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for re-painting, renovation, clean up and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training.

Radiologic Health Branch

The Radiologic Health Branch is within the Food, Drug, and Radiation Safety Division of the California Department of Public Health. The Radiological Health Branch enforces the laws and regulations indicated below designed to protect the public, workers, and the environment from exposure to radiation. The Radiological Health Branch is responsible for providing public health functions associated with administering a radiation control program. This includes licensing of radioactive materials, inspection of facilities using radiation, investigation of radiation incidents, and surveillance of radioactive contamination in the environment.

The Radiological Health Branch administers and enforces the following laws and implementing regulations:

- Radiation Control Law (Health & Safety Code Sec. 114960 et seq.); and
- Regulations implementing the above laws are in Title 17, CCR, Division 1, Chapter 5, Subchapters 4.0, 4.5, & 4.6.

3.7.2 Affected Environment

The project area includes the areas designated for the on-site wetland mitigation commitments and stormwater management and water quality control structures. On-site utilities would be constructed within the VA Development Area, and off-site utilities would be constructed outside the VA Transfer Parcel, under easements on City property east (underground utilities) and north (storm drains) of the parcel. Currently, no hazardous materials are used or hazardous waste generated in the project area. However, as a

result of former Naval operations, the former NAS Alameda property was added to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund) National Priorities List (NPL) in July 1999.

CERCLA requires federal agencies to respond where necessary to protect human health and the environment when there is a release, or threat of release, of a hazardous substance into the environment or when there is a release of any pollutant or contaminant that could present an imminent and substantial danger to public health or welfare. Under CERCLA, USEPA developed the NPL of sites that present the greatest risk to public health and the environment. The Navy is implementing CERCLA response actions at the former NAS Alameda to address the historic releases of hazardous substances.

To comply with the requirements of CERCLA, the Superfund Amendments and Reauthorization Act, and the Defense Environmental Restoration Program, the Navy established the Environmental Restoration Program to reduce the risk to human health and the environment from past waste-disposal operations and hazardous-substance spills from Navy activities, including certain oil spills that are not addressed within the CERCLA framework.

CERCLA Environmental Investigation and Cleanup Process at the Former NAS Alameda (Transfer Parcel)

Subsequent to the listing of the former NAS Alameda on the NPL, CERCLA investigations and remedial actions have been conducted and continue under the Navy's Environmental Restoration Program. In 2001, the Navy and USEPA negotiated and signed a Federal Facility Agreement, which was signed by the California Department of Toxic Substances Control and the San Francisco Bay Regional Water Quality Control Board in 2005. This agreement requires that the Navy investigate and remediate actual or threatened releases of hazardous substances, pollutants, and contaminants at the former NAS Alameda.

The Navy has implemented and continues to implement CERCLA response actions (both remedial and removal) to address the releases of hazardous substances at the VA Transfer Parcel. Potential environmental effects of the remedial activities (that is, of excavating soil, transporting soil, and operating treatment systems) have been, and will continue to be, evaluated by the Navy and regulatory agencies in conjunction with the approval process for specific response actions selected and implemented by the Navy under CERCLA. Appropriate controls to protect human health and the environment have been, and will continue to be, incorporated into the design and implementation of remedial activities.

Although the property transfer from the Navy to the VA has already occurred, the Navy continues to perform its ongoing CERCLA obligations, including investigation management, remedy selection, and remedial action phases until a Remedial Action Completion Report or similar document is completed. In addition, the Navy continues to manage the investigation and remaining CERCLA phases to address environmental contamination identified before the property transfer.

Contaminant Management Plan

As discussed in Section 3.3, *Water Quality and Coastal Consistency*, the project area is known to have contaminated soil and groundwater which is undergoing remedial action under the supervision of USEPA, the San Francisco Bay RWQCB, and DTSC. The contaminant management plan presents protocols to characterize, manage, and dispose of contaminated soil and groundwater and identifies procedures in the event that previously undiscovered waste is encountered.

Contaminants likely to be encountered during Project development include Marsh Crust, petroleum hydrocarbons, radiological compounds, contaminated groundwater, and institutional controls. In the event that these contaminants are encountered the following measures would be implemented:

- If Marsh Crust is encountered, excavated material may contain SVOCs and petroleum hydrocarbons that would require characterization prior to disposal.
- Several locations within and adjacent to the project area are affected by petroleum hydrocarbons. These soils would require characterization prior to reuse or disposal.
- Health and safety protocols would be required during excavation within Lexington Street and excavated soil would require field screening and testing for radium-226 to assess soil management alternatives.
- Shallow groundwater (within 2 feet below ground surface) is present throughout the Project area. As a result of historic activities at the former Naval Air Station Alameda, groundwater in the Project area is contaminated with petroleum hydrocarbons, VOCs, perfluorooctanoic acid, and perfluorooctane sulfonate from multiple sources.

Therefore, underground utility placement may generate contaminated groundwater which would require characterization prior to discharge or disposal. If contaminant concentrations do not exceed the EBMUD discharge criteria, treatment for these contaminants is not necessary. However, treatment for other permit requirements (that is, sediment), or to meet NPDES discharge limitations, would be required.

- ICs are present at a number of locations within the Project area. The ICs require the preparation of a Site Management Plan and approval by Federal Facility Agreement signatories to ensure the protection of construction worker health and management of waste if intrusive activities are performed in these areas. The contaminant management plan meets the requirements of the Site Management Plan.

The Project would require the excavation, profiling, manifesting, transportation and disposal of contaminated and potentially hazardous material. In addition, previously undiscovered waste may be encountered during the Project construction which should be quickly characterized and managed to reduce construction delays. Due to these circumstances, the following would be performed.

1. **Mitigation monitoring** – The VA may require oversight by a qualified professional, operating under the supervision of a registered civil engineer or geologist, to be onsite during removal of contaminated material.

2. **Notification requirements** – As the generator, it is the responsibility of the VA to ensure that the waste is profiled, manifested, reused and/or properly disposed. To ensure that these activities are performed in accordance with applicable laws and regulations, the VA or their designee shall be notified within 48-hours prior to the disposal of contaminated material.
3. **Reporting** – To ensure the protection of Contractor workers and properly document the management of contaminated materials, the following Contractor documents are required: (1) Site specific Health and safety Plan; (2) Discharge permits; (3) Characterization reports; (4) Contaminant management documentation.

Soil Testing at Proposed Wetlands Mitigation Site

A soils investigation was performed at the site for the purpose of evaluating ecological suitability of the onsite soils to meet mitigation design goals for the proposed wetlands mitigation site. The evaluation included completion of soil borings, characterization of soil conditions, and development of design and construction recommendations. Results of this investigation indicated that portions of the onsite sandy soils contain concentrations of the heavy metal cadmium above allowable screening levels (as identified by the local RWQCB) for plant establishment, although they were below screening levels defined for human health and safety. These soils would be removed to provide optimal plant establishment conditions at the wetlands.

Proposed Storm Drain Area

Several Installation Restoration sites are located in close proximity to the project area (see Figure 4 in the contaminant management plan). These sites are regulated by the USEPA under CERCLA. The locations of the storm drains, as shown in Figure 2-4, were specifically identified to avoid Installation Restoration sites. According to the contaminant management plan, shallow groundwater is located throughout the project area, and can be encountered at depths of 2 feet below ground surface. Storm drain installation would occur at depths less than 10 feet deep. In the event that contaminated groundwater is encountered during installation of storm drains, the project would follow waste characterization, discharge and disposal procedures outlined in the contaminant management plan.

Additional Database Review

According to the California Environmental Protection Agency, the provisions in Government Code Section 65962.5 are commonly referred to as the Cortese List. The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with CEQA. The VA reviewed the Cortese List, which includes the resources listed below, for references to the project area:

- List of Hazardous Waste and Substances sites from the California Department of Toxic Substances Control's EnviroStor database
- List of Leaking Underground Storage Tank Sites from the Water Board GeoTracker database

- List of solid waste disposal sites identified by the Water Board with waste constituents above hazardous waste levels outside the waste management unit
- List of active Cease and Desist Orders and Cleanup and Abatement Orders from the Water Board
- List of hazardous waste facilities subject to corrective action identified by DTSC

To further assess the hazards and hazardous materials risks associated with the project area, the VA reviewed reasonably ascertainable and reviewable regulatory information published by federal, state, local, tribal, health, and/or environmental agencies pertaining to the project area. Aside from the former NAS Alameda being listed on the NPL, no additional regulatory sites were identified in the project area.

Pesticides

According to the 2013 EA, the VA Transfer Parcel could contain pesticide residue from pesticides that were applied during the former management of the property. To the Navy's best knowledge, pesticides formerly used on site were registered, labeled, and applied in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act, 7 USC Section 136 and subsequent sections, and in accordance with its implementing regulations, and according to the labeling provided with such substances.

Munitions Storage Areas

As explained in the 2013 EA, soil and groundwater samples were collected at the former munitions storage areas to determine whether the presence of munitions resulted in a CERCLA-related release of hazardous substances. Explosives were not reported at levels above their screening levels at any of the sample locations on the VA Transfer Parcel.

Fire Hazards

The project area is not located within a high fire hazard severity zone.

Airports and Schools

The VA Transfer Parcel is located over 5 miles from Oakland International Airport. No schools exist within 0.25 mile of the project area.

3.7.3 Environmental Consequences

Inadvertent Hazardous Waste and Materials Releases or Spills

As stated in the 2013 EA, the proposed project would not have a substantial impact on or from hazards and hazardous substances. The new project features being assessed in this SEA would not increase the risk from hazards and hazardous substances.

Hazardous materials uses and waste generation from operations and routine maintenance operations would not pose a substantial public health or safety hazard to the project vicinity. Compliance with applicable city, state, and federal laws would minimize potential exposure to hazardous materials and waste, via upset and accident conditions, and there would be no substantial impact.

Wetland mitigation and implementation of new stormwater features would involve use of construction vehicles and equipment and construction activities including excavations and/or grading, which would require that limited quantities of miscellaneous hazardous substances (such as petroleum-based products and/or fluids, solvents, and oils) be used in the project area and staging areas. As with any liquid or solid, an accidental release could occur during handling and transfer from one container to another. Depending on the relative hazard of the material, if a spill of significant quantity were to occur, the accidental release could pose a hazard to both construction employees and the environment, resulting in a substantial impact. Implementing the SWPPP, which is required to be prepared as part of the proposed project, would minimize hazards to construction employees and the environment.

Airports and Schools

No schools exist within 0.25 mile of the VA Transfer Parcel. The nearest school is Ruby Bridges Elementary school, located about 1.5 mile east of the project area. The proposed wetlands mitigation and storm drain project areas are located over 5 miles from Oakland International Airport. No uses are proposed that would affect airport operations at this airport or other airports in the region, and the project would not create a safety hazard for people residing or working in the project area. Therefore, no impact would occur.

Fire Hazards

The wetland mitigation and storm drain project areas are not located in a high fire hazard severity zone. Open-space land uses are near the project area; however, the majority of the project area consists of abandoned paved runways or lacks vegetation. On-site wetland mitigation would require vegetating and revegetating some portions of the project area. However, in general, the proposed project would not add any new uses that could create a greater wildland fire risk than what currently exists. Fire-suppression equipment including fire extinguishers would be kept on site during construction in accordance with local fire codes and standards. In addition, construction activities that could generate sparks would be conducted in the designated staging areas. Therefore, the resulting exposure of people or property to wildland fire hazards during construction and operation would not be substantial.

Interference with Emergency Response Plans

The VA would comply with all adopted emergency response plans and other measures, as required by the County during construction activities and operation of the proposed facilities, to install appropriate safety measures in the event of an emergency. The wetland mitigation area and storm drains would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and construction vehicles would use the temporary construction vehicle access road intended for site access during construction. Therefore, impacts related to the continued implementation of emergency response plans would not be substantial.

CERCLA Obligations

The Navy would continue to perform its ongoing CERCLA obligations, including investigation management, remedy selection, and remedial action phases, and following the property transfer until completion of such obligations and approval by the regulatory agencies. ICs would allow the property to be developed for its intended use, subject to land use restrictions designed to prevent exposure to residual levels of hazardous materials. The VA would comply with the CERCLA ICs and would not use the property for any use or activity that is prohibited by the ICs. Such compliance would ensure that the property after transfer would be used in a manner that adequately protects the environment and human health as required by CERCLA.

Further, the VA would be required to manage hazardous materials and wastes in accordance with the contaminant management plan and applicable federal, state, and local regulations. The VA would be responsible for the release of environmental contaminants on the property identified after the date of transfer and for future and/or newly identified releases of environmental contaminants at, or from, the property that occur after the transfer. The VA would not use the VA Transfer Parcel for any use or activity that is prohibited by the CERCLA ICs.

For any petroleum sites identified prior to transfer of the property, the Navy would continue to manage the investigation, corrective action plan, and corrective action implementation phases until the completion of corrective action or a no further action determination.

Impact Summary

Table 3-49 summarizes the impacts to hazards and hazardous substances.

Table 3-49. Summary of Impacts to Hazards and Hazardous Substances

Resource Area	Threshold Description	Level of Impact under NEPA
Hazards and Hazardous Substances	Would the project cause a significant hazard to the public or environment through inadvertent hazardous waste and materials releases or spills?	No significant construction-related impact
		No significant operational impact
	Would the Proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No significant construction-related impact
		No significant operational impact
	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No significant construction-related impact
		No significant operational impact
	Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No significant construction-related impact
		No significant operational impact

Resource Area	Threshold Description	Level of Impact under NEPA
	Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No significant construction-related impact
		No significant operational impact
	Would the project be located in a high or very high fire hazard severity zone or create additional fire risk?	No significant construction-related impact
		No significant operational impact

3.8 Geology and Soils

3.8.1 Regulatory Setting

Federal Regulations

For a discussion of federal regulations refer to Section 3.14.1 (*Geology and Soils Regulatory Framework*) of the 2013 EA. Below is a summary of the State regulatory guidance.

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act (PRC Sections 2621–2630)

The Alquist-Priolo Act was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the California State Geologist to establish regulatory zones known as earthquake fault zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected Cities, Counties, and state agencies for their use in planning. Before a project can be permitted in a designated Alquist-Priolo earthquake fault zone, Cities and Counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6)

The Seismic Hazards Mapping Act addresses earthquake hazards from a nonsurface fault rupture, including liquefaction and seismically induced landslides. The Act established a mapping program for areas that have the potential for liquefaction, landslides, strong ground shaking, or other earthquake and geological hazards. The Act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

California Building Code

The State of California mandates minimum standards for building design through the California Building Code (CCR, Title 24). The code applies to building design and construction and is based on the International Conference of Building Officials Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The Uniform Building Code was incorporated as part of the California Building Code, which has been modified for California conditions with more detailed and/or more stringent regulations.

3.8.2 Affected Environment

The affected environment for geology is as described in the 2013 EA, and no known changes have occurred. A summary of the affected environment as it applies to this SEA is provided below, and the reader is directed to the 2013 EA for more information.

Regional Geologic Setting

The VA Transfer Parcel is located immediately east of San Francisco Bay in the Coast Ranges geomorphic province. The Coast Ranges geomorphic province is a geologically and seismically active region on the western margin of the North American Plate, characterized by northwest-to-southeast-trending mountains and valleys and northwest-trending faults (California Geological Survey [CGS] 2002). San Francisco Bay to the west is underlain by Late Mesozoic Age rocks of the Franciscan Complex, consisting of sheared shale and interbedded sandstone, with serpentinite and other metamorphic rocks. The Franciscan bedrock is overlain by a young, geologically unconsolidated sedimentary sequence which is divided into three units: older Bay sediments of the Yerba Buena Formation, Merritt sands of the San Antonio Formation, and younger Bay Mud. Artificial fill has been placed along the margins of San Francisco Bay to reclaim marshland and land once covered by shallow water.

Topography and Soils

Surface elevations at Alameda Island are relatively low, ranging from mean sea level (msl) to about 30 feet above mean sea level. The elevation of the VA Transfer Parcel ranges from 0 msl to about 10 feet above msl. The VA Transfer Parcel is located on top of about 15 to 30 feet of artificial fill that is made up of loose to medium dense sands. The artificial fill is underlain by 30 to 65 feet of very soft, compressible younger Bay Mud deposits. About 30 feet of dense to very dense sands of the San Antonio Foundation, including Merritt and Posey Sands, are located beneath the younger Bay Mud deposits.

Faulting and Seismicity

The Bay Area is located in a seismically active region near the boundary between two major tectonic plates: the Pacific Plate to the southwest and the North American Plate to the northeast. According to USGS, the probability of an earthquake measuring magnitude 6.7, 7 and 7.5 in the San Francisco Bay Area within the next 30 years is 72 percent, 51 percent, and 20 percent, respectively (USGS 2019).

Table 3.14-1 of the 2013 EA lists the proximity of the closest active faults to the VA Transfer Parcel as well as the estimated maximum moment magnitude of those faults. The major regional active faults with potential to cause damaging earthquakes at the VA Transfer Parcel include the San Andreas, San Gregorio, Hayward, and Calaveras Faults. Earthquakes occurring on faults closest to the VA Transfer Parcel could generate the largest ground shaking at the site. According to the CGS, Alameda Point is not located within an earthquake fault zone, and no active faults exist on the VA Transfer Parcel.

Liquefaction and Expansive Soils

Liquefaction is the process by which soils lose shear strength and liquefy during episodes of intense ground shaking. As a general rule, liquefaction is most likely to occur in areas underlain by loose, fine sands and/or silts and a water table within 50 feet of the ground surface. The project area is in an area mapped as a liquefaction hazard zone (VA and Navy 2013).

Expansive soils possess a “shrink-swell” potential, which is the cyclic change in volume that occurs in fine-grained clay sediments from the process of wetting and drying. Fills, such as those underlying the project site, typically possess low shrink-swell potential because they have a coarse-grained composition. However, the Bay Mud that underlies the site is subject to shrink-swell behavior (Environmental Science Associates [ESA] 2013).

Paleontological Resources

A search of University of California Museum of Paleontology database showed that few invertebrate fossils and no vertebrate fossils in similar geologic environments exist in Alameda County. The results also showed that, overall, there is very low if any potential to encounter fossil resources at the greater Alameda Point area (ESA 2013).

3.8.3 Environmental Consequences

Rupture of a Known Earthquake Fault

The project area is within a seismically active area; however, there are no active faults, potentially active faults, or Alquist-Priolo Earthquake Fault Zones near the project area. The active fault nearest to the project area is the Hayward Fault about 6 miles to the east. Accordingly, the project area is not likely to be affected by a surface fault rupture.

Ground Shaking, Liquefaction, and Expansive Soils

Although the project area is not likely to be affected by a surface fault rupture, the proposed project could be subject to secondary hazards such as ground shaking, landslides, and liquefaction from other regional active or potentially active faults. Implementation of the new storm drains and the proposed on-site wetland mitigation would not involve constructing large, permanent structures and would not create additional hazards related to seismic ground shaking, landslides, or liquefaction.

The project design would be required to include seismic-related safety features to mitigate the potential for seismically induced ground failure. Further, the elevation of the

VA Transfer Parcel is relatively flat, ranging from 0 msl to about 10 feet above msl, and impacts from seismically induced landslides are not anticipated. Therefore, impacts from ground shaking and liquefaction would not be substantial, and no operational impact related to seismically induced landslides or slope failures would occur.

Bay Muds that underlie the site have shrink-swell potential. Project activities could occur on expansive soils; however, soil properties have been considered in the project design, and engineering controls would be applied to reduce the potential for impacts. Additionally, new project elements would be constructed on previously disturbed land, and the impacts from these elements being located on expansive soils would not be substantial.

There would be no impact from septic tanks since none are proposed as a part of the new project features.

Soil Erosion and Loss of Topsoil

Construction of the new project elements would require temporarily disturbing surface soils and removing existing on-site pavement and existing subsurface infrastructure. Exposed fill materials would be susceptible to erosion during construction-related excavation. Construction of the storm drains would require installation of cofferdams and excavation of outfall areas to subgrade to allow for outfall construction and installation of rock slope protection. Additionally, on-site wetland mitigation would involve excavating uplands and tarmac, constructing a tidal inlet, and installing a temporary cofferdam to dewater the seawall in order to install the tidal inlet. These activities could increase soil erosion and loss of topsoil temporarily during construction. However, netting would be used during this work to minimize and contain debris entering San Francisco Bay. Wetland mitigation would also involve vegetating the tidal marsh plain and revegetating a transition zone with slopes to provide the created marsh with resilience to sea level rise. During operations, these improvements would prevent soil erosion and loss of topsoil in the wetlands mitigation area.

Stormwater runoff could cause erosion during project construction. However, the project would involve erosion- and sediment-control plans and an SWPPP. The SWPPP would include appropriate erosion- and sediment-control measures to effectively prevent soil, dirt, debris, and other pollutants from entering stormwater runoff, the storm drain system, the lagoons, or the bay or estuary during construction. Erosion- and sediment-control plans would indicate the specifications and maintenance schedules for the installation and upkeep of the erosion-control mechanisms. With implementation of the SWPPP and erosion- and sediment-control plans, impacts on erosion and loss of topsoil would not be substantial.

Paleontological Resources

According to the University of California, Museum of Paleontology, very few if any paleontological resources exist in the project area (ESA 2013). Construction activities such as excavations and deep dynamic compaction would have the potential to impact paleontological resources. However, the project area has been previously disturbed and developed, and there is a low likelihood that paleontological resources would be

encountered during the proposed project activities. Therefore, impacts to paleontological resources would not be substantial.

Impact Summary

Table 3-50 summarizes the impacts to geology and soils.

Table 3-50. Summary of Impacts to Geology and Soils

Resource Area	Threshold Description	Level of Impact under NEPA
Geology and Soils	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	No significant construction-related impact No significant operational impact
	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking, liquefaction, and expansive soils?	No significant construction-related impact No significant operational impact
	Would the project result in substantial soil erosion or the loss of topsoil?	No significant construction-related impact No significant operational impact
	Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No significant construction-related impact No significant operational impact

4 List of Required Permits

The VA would be responsible for construction and operation of the proposed project, including new storm drain facilities. The VA would also be responsible for implementing mitigation measures. The City would be responsible for the ongoing maintenance of the existing storm drain system.

Because the original project scope was analyzed in the 2013 EA, which concluded with a FONSI, the VA has initiated or completed the consultation and/or permit application processes summarized in Table 4-1. As described in the 2013 EA, construction of the proposed project would not begin until the proposed project achieves environmental compliance with applicable laws and regulations, as described below in the table. Environmental compliance for the proposed project would be achieved upon coordination of this SEA with appropriate agencies, organizations, and individuals for their review and comments.

Table 4-1. Permits, Approvals, and Reviews

Agency	Permit, Approval, or Review	Status
Federal		
NMFS	Federal Endangered Species Act, Section 10 compliance, informal consultation	In process
SHPO	National Historic Preservation Act, Section 106 compliance	Completed in 2013; VA contacted the NAHC on February 17, 2020, requesting a current contact list to distribute updated outreach letters and conduct additional consultation, as necessary. Each of the tribal groups identified as a result of this inquiry, as well as the federally recognized California Valley Miwok Tribe, was contacted regarding the potential for tribal cultural resources.
USACE	CWA, Section 404 permit	In process; permit application to be submitted by VA in 2018
USFWS	Federal Endangered Species Act, Section 7 consultation	In process; BO for proposed construction at VA Development Area received in 2012; supplemental Biological Assessment being drafted by VA for wetland mitigation area
State		
San Francisco Bay RWQCB	CWA, Section 401 water quality certification and Waste Discharge Requirements, pursuant to California's Porter-Cologne Water Quality Act	In process; permit application to be submitted by VA in 2018
	CWA, Section 402 NPDES – general construction stormwater permit waste discharge requirements	In process; permit application to be submitted by VA prior to construction start date
Local		
City of Alameda	Encroachment permit and right-of-way permit	Permit applications to be submitted by VA prior to construction start date



5 References Cited

- [ACTD] Alameda County Transportation Commission (ACTC), 2014. Countywide Travel Demand Model
- 2018 Alameda County Transportation Commission (ACTC), 2014. Countywide Travel Demand Model, July 2014. https://www.alamedactc.org/app_pages/view/8079 (accessed June 2018).
- AECOM
- 2012 *Wetland Delineation and Preliminary Jurisdictional Determination VA Outpatient Clinic and National Cemetery Project at the Former Naval Air Station Alameda*. AECOM; Los Angeles, CA. September.
- [ARB] California Air Resources Board
- 2016 *Ambient Air Quality Standards*. ARB; Sacramento, CA. www.arb.ca.gov/research/aaqs/aaqs2.pdf.
- 2018 *Air Quality Standards and Area Designations*. ARB; Sacramento, CA. <https://www3.arb.ca.gov/desig/desig.htm>. Accessed August 2018.
- Battelle
2010. *Final Record of Decision for IR Site 2, Alameda Point, Alameda, California, August 2010*.
- [BAAQMD] Bay Area Air Quality Management District
- 2017 *California Environmental Quality Act Air Quality Guidelines*. BAAQMD; San Francisco, CA. https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en
- [BCDC] San Francisco Bay Conservation and Development Commission
- 2015 *BCDC Jurisdiction and Authority*. Accessed September 12, 2019. Available online: <https://bcdcc.ca.gov/bcdc-jurisdiction-authority.html>.
- [BRA] Basin Research Associates, Inc.
- 1997 *Historic Property Survey Report/Finding of Effect: 50-Foot Channel Navigation Improvements Project, Oakland Harbor, Alameda County*. Prepared for the Port of Oakland. October.
- [CDFW] California Department of Fish and Wildlife
- 2009 *California Natural Diversity Database – RareFind 5 and BIOS*. CDFW Biogeographic Data Branch; Sacramento, CA. <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>.
- 2012 Staff Report on Burrowing Owl Mitigation; Sacramento, CA. March 7, 2012. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline=true>
- 2018 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. CDFW; Sacramento, CA. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>
- [CEC] California Energy Commission.
- 2018 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings for the 2019 Building Efficiency Standards. CEC; Sacramento, CA. https://www2.energy.ca.gov/publications/displayOneReport_cms.php?pubNum=CEC-400-2018-020-CMF

[CEQ] Council on Environmental Quality

- 2010 *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. Washington D.C. February 18, 2010.
<https://ceq.doe.gov/docs/ceq-regulations-and-guidance/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf>

[CNPS] California Native Plant Society

- 2019 *Inventory of Rare and Endangered Plants of California* (online edition, v8-03). CNPS; Sacramento, CA.

[DWR] California Department of Water Resources

- 2004 California's Groundwater Bulletin 118 - Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin. DWR; Sacramento, CA.

[ESA] Environmental Science Associates

- 2013 *Alameda Point Project Draft Environmental Impact Report*. ESA; Oakland, CA.

H.T. Harvey & Associates

- 2019a Alameda Point Veterans Affairs Project Final Wetland Mitigation and Monitoring Plan. *Figure 6: Existing Conditions in the Wetland Mitigation Area*. January 25, 2019. Los Gatos, CA.
- 2019b Alameda Point Veterans Affairs Project Final Wetland Mitigation and Monitoring Plan. *Figure 5: Wetland Mitigation Area Overview*. January 25, 2019. Los Gatos, CA.

Intergovernmental Panel on Climate Change

- 2007 *Climate Change 2007 – The Physical Science Basis*. Intergovernmental Panel on Climate Change; Cambridge, New York.

[JRP] JRP Historical Consulting Services, LLC

- 1997 *Guide to Preserving the Character of the Naval Air Station Alameda Historic District*. Prepared by S. D. Mikesell. Prepared for Engineering Field Activity, West, Naval Facilities Engineering Command and Naval Air Station Alameda, California.
- 2011 *Combined Specific Buildings Survey and Evaluation Report/Cold War Era Historic Resources Survey and Evaluation Report for Naval Air Station Alameda*. Davis, California. Prepared for Naval Facilities Engineering Command Southwest.
- 2012 *National Register of Historic Places Registration Form*. Prepared by Christopher McMorris and Chandra Miller. Davis, California. Prepared for Naval Facilities Engineering Command Southwest.

[JRP and PGAdesign] JRP Historical Consulting Services, LLC, and PGAdesign

- 2012 *Cultural Landscape Report for Naval Air Station Alameda*. Draft. Davis, California. Prepared for Naval Facilities Engineering Command Southwest.

[NMFS] National Oceanic and Atmospheric Administration National Marine Fisheries Service

- 2018 West Coast Region, California Species List Tools

National Oceanic and Atmospheric Administration Office for Coastal Management

- 2019 *Coastal Zone Management Act*. February 15, 2019. Available online:
<https://coast.noaa.gov/czm/act/>.

[Navy] United States Navy

- 1999 *Environmental Impact Statement for the Disposal and Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility, Alameda, California. Engineering Field Activity, West, Naval Facilities Engineering Command.* San Bruno, California.

[Navy et al.] US Department of the Navy, Advisory Council on Historic Preservation, and California State Historic Preservation Officer

- 1999 "Memorandum of Agreement (MOA) Among the United States Navy, the Advisory Council on Historic Preservation and the California State Historic Preservation Officer regarding the Layaway, Caretaker Maintenance, Interim Leasing, and Disposal of Historic Properties on the Former Naval Air Station, Alameda, California."

[OHP] California Department of Parks and Recreation, Office of Historic Preservation

- 2011 "Former Naval Air Station Alameda Cold War Update, Naval Air Station Alameda, CA." Letter from California State Historic Preservation Officer Milford Wayne Donaldson to US Department of the Navy. Reference USN090603A. Sacramento, California: California Department of Parks and Recreation.
- 2012 "Former Naval Air Station Alameda Cultural Landscape Report, Naval Air Station Alameda, CA." Letter from California State Historic Preservation Officer Milford Wayne Donaldson to US Department of the Navy. Reference USN120221A. Sacramento, California: California Department of Parks and Recreation.

[PAR] PAR Environmental Services, Inc.

- 1996 *An Archaeological Evaluation of the Fleet Industrial Supply Center—Alameda Annex/Facility, and Navy Alameda Family Housing, Alameda County, California.* Prepared by M. L. Maniery, C. Baker, and K. Syda.

[TRB] Transportation Research Board

- 2010 *Highway Capacity Manual, Fifth Edition.* TRB; Washington, DC.

[USACE] United States Army Corps of Engineers

- 2013 *Preliminary Jurisdictional Determination File No. 2012-00286S.* USACE; Regulatory Division, San Francisco, CA.

[USEPA] United States Environmental Protection Agency

- 2018a *Overview of the Drinking Water Sole Source Aquifer Program.* USEPA; Washington, D.C.
- 2018b *De Minimis Emission Levels.* USEPA; Washington, D.C. <https://www.epa.gov/general-conformity/de-minimis-emission-levels>.

[USFWS] United States Fish and Wildlife Service

- 2019a *Information for Planning and Consultation* (online edition). USFWS; Carlsbad, CA. <https://ecos.fws.gov/ipac/>.
- 2019b *Critical Habitat Mapper.* USFWS; Carlsbad, CA. <https://fws.maps.arcgis.com/home/webmap/viewer.html>.

[USGS] United States Geological Survey

- 2019 *What is the probability that an earthquake will occur in the Los Angeles Area? In the San Francisco Bay Area?* USGS; Reston, VA. https://www.usgs.gov/faqs/what-probability-earthquake-will-occur-los-angeles-area-san-francisco-bay-area?qt-news_science_products=0#qt-news_science_products

[VA] Department of Veterans Affairs

- 2013 *Final Environmental Assessment: Transfer of Excess Property and Development of an Outpatient Clinic, Offices, and National Cemetery at the Former Naval Air Station Alameda, California.* https://www.bracpmo.navy.mil/content/dam/bracpmo/california/former-naval-air-station-alameda/pdfs/all-documents/environmental-documents/NEPA/FedTransfer/Alameda_201311_FinalEA.pdf. Accessed September 12, 2019.

[VA and Navy] Department of Veterans Affairs and United States Navy

- 2013 *Final Environmental Assessment, Transfer of Excess Property and Development of an Outpatient Clinic, Offices, and National Cemetery at the Former Naval Air Station Alameda, California.* November.

[Water Board] State Water Resources Control Board

2017. *Basin Plan – Chapter 2: Beneficial Uses.* December 18, 2017. https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/bp_ch2.html#2.2.1

Woodbridge, S. B.

- 1992 *Historic Architectural Resources Inventory for the Naval Air Station, Alameda.* Alameda, California: NAS Alameda.

Appendix A. 2013 Alameda Transfer, Clinic, and Cemetery Environmental Assessment

This page is intentionally left blank.

Appendix B. Storm Drain Study

This page is intentionally left blank.

Appendix C. Biological Resources Supporting Information

This page is intentionally left blank.

Appendix D. Final Transportation Report

This page is intentionally left blank.

Appendix E. Cultural Resources Supporting Information

This page is intentionally left blank.

Appendix F. Air Quality and Greenhouse Gas Calculations

This page is intentionally left blank.