DEPARTMENT OF DEFENSE
U.S. DEPARTMENT OF THE NAVY

FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE DEPARTMENT OF THE NAVY (NAVY) LEASE OF SUBMERGED LANDS AT MARE ISLAND TO ENABLE THE CONSTRUCTION AND OPERATION OF A FERRY MAINTENANCE FACILITY, VALLEJO, CALIFORNIA

Pursuant to the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] § 1500-1508) implementing procedural provisions of the National Environmental Policy Act (NEPA), and the Navy's Procedures for Implementing NEPA (32 CFR Part 775), the Navy gives notice that an Environmental Assessment (EA) has been prepared and that an Environmental Impact Statement (EIS) is not required for the Navy's lease of submerged lands at Mare Island in Vallejo, California.

Proposed Action: The Proposed Action is to lease approximately 3.58 acres of Navy-owned submerged lands located within Mare Island Strait. The lease would allow the San Francisco Bay Area Water Emergency Transportation Authority (WETA) to construct and operate the waterside components of a proposed ferry maintenance facility upon the Navy's submerged lands. WETA will be responsible for acquiring any applicable building permits, approvals, and environmental permits prior to development of the property, and will be responsible for implementation of the mitigation measures identified herein.

Purpose and Need: The purpose of the Navy's Proposed Action is to lease submerged lands to enable WETA's construction and operation of the waterside components of a new ferry maintenance facility. This action is needed to assist the local land use authority in effectuating its base reuse and redevelopment, as envisioned in the City of Vallejo's *Mare Island Specific Plan* (City of Vallejo, 2008).

Existing Conditions: The lease area evaluated in the EA is comprised of 3.58 acres of Navy-owned submerged lands in the Mare Island Strait along the shoreline near Waterfront Avenue, between 6th and 7th streets on Mare Island. The lease area is located within the submerged lands of the former Mare Island Naval Shipyard, which is on the western edge of the City of Vallejo in Solano County, California, approximately 30 miles northeast of the City of San Francisco.

WETA is proposing to relocate the existing Vallejo-Baylink Ferry Maintenance Facility from its current location on Mare Island approximately 0.5 miles northwest of the lease area in the City of Vallejo, California. WETA is proposing to construct and operate a new ferry maintenance facility that would be located on both 3.58 acres of the Navy's submerged lands in Mare Island Strait and on landside property that is not owned by the Navy. The Navy's proposed action—the submerged land lease—would allow WETA to construct and operate the waterside components of the proposed ferry maintenance facility (e.g., berths) within the Navy's submerged lands.

This EA is required because the Navy still retains ownership of the submerged lands, and the proposed use of the property by WETA for the waterside components of the ferry maintenance

facility was not specifically evaluated in the Navy's previous NEPA analysis in the 1998 Mare Island Naval Shipyard Environmental Impact Statement/Environmental Impact Report.

Scope of the EA: The EA assessed the potential direct, indirect, short-term, long-term, and cumulative impacts on the human environment resulting from the submerged land lease and the subsequent construction and operation of the waterside components of the ferry maintenance facility. The Proposed Action evaluated in the EA is limited to the Navy's lease of submerged lands and does not include the landside portion of the proposed maintenance facility. However, construction and operation of the landside components of the facility was analyzed in the EA to assess and disclose potential indirect and cumulative effects.

The EA documents the Navy's compliance with the requirements of NEPA, as amended; the CEQ regulations implementing NEPA (40 CFR Sections 1500-1508); and Navy procedures for implementing NEPA (32 CFR Part 775).

Resource areas examined in the EA include the physical environment (geology, topography, and soils; groundwater; surface water; air quality and greenhouse gases; noise and vibration; visual resources; transportation; land use), biological resources (i.e., marine biota), cultural resources (historic properties, archaeological resources, and architectural resources), hazards and hazardous materials, socioeconomics, and utilities. The EA also addressed potential cumulative impacts that may result from past, present, and reasonably foreseeable projects in the region.

Consistent with CEQ NEPA regulations (40 CFR Section 1506.6, Public Involvement) and Navy policy, the Draft EA was made available to agencies and the public for a 15-day comment period. This review period allowed the public to be involved in the preparation of the EA. No comments were received.

After the close of the public comment period, WETA refined the design of the proposed project, which resulted in a minor modification of surface water coverage for both build alternatives (Alternatives 1 and 2—further discussed below) beyond what was presented in the Draft EA. This minor design modification results in a negligible increase to the direct, indirect, and cumulative environmental impacts presented in the Draft EA for both Alternative 1 and Alternative 2. Based on coordination with resource and permitting agencies, no changes are necessary to either resource agency permit conditions or the mitigation measures presented in the Draft EA to accommodate the design modification.

Alternatives Analyzed: Three alternatives were considered in the EA: Alternative 1, Alternative 2, and the No Action Alternative. Alternative 1 has been identified as the preferred alternative.

Alternative 1 is the issuance of a 3.58-acre lease agreement for a portion of Navy-owned submerged lands for the construction and operation of the waterside components of a new ferry maintenance facility to be owned and operated by WETA. The waterside improvements would cover approximately 14,687 square feet of water surface. This total would include approximately 8,787 square feet of newly constructed facilities, with the remaining 5,900 square feet consisting of the existing service float (4,080 square feet), and a loading float (1,800 square feet) that would be relocated from the current maintenance facility for reuse at the new site.

The waterside improvements include construction of three full-service berths and one maintenance berth for the vessels. The berths would be separated by two 124-foot-long finger floats and one 200-foot-long maintenance float, and would span approximately 450 linear feet along the waterfront. A fifth berth would be adjacent to the quay wall, and would be used infrequently if a large land-based crane was needed for heavy maintenance and repairs. The berths would include concrete floating docks with steel-pipe guide piles, and fendering sized to accommodate the ferry vessels. Basic utility services, such as fueling, potable water, shore power, sewage disposal, and hose bibs to wash down the vessels, would be provided at each berth. In addition, the three full-service berths would have utility connections for bilge water, waste oil, lube oil, and compressed air. Other components of the waterside facility would include lighting, power, a tool shed, ship's store shed, diver access platform, access gangway, security systems, communications systems, main gangway, access portal, and roll-up security gate. The waterside facility would be primarily used for overnight moorage, daily fueling, and light maintenance of WETA vessels. Light maintenance work would involve vessel repairs that do not require heavy equipment or removal of major vessel components. Heavy maintenance activities would occur on an infrequent basis. Limited passenger service is envisioned to occur on trips between the maintenance facility and the existing Vallejo Ferry Terminal, with primary passenger service to San Francisco continuing to occur from the existing terminal. Construction for the waterside improvements would occur between August 1 and October 15.

WETA would be responsible for obtaining all applicable permits required prior to the construction and operation of the facility. WETA would also be responsible for complying with all applicable local, State, and Federal laws; mitigation and avoidance measures; and permit conditions. The requirement for WETA to obtain all permits and comply with local, State and Federal laws would be memorialized in the Navy lease agreement.

Under Alternative 2, the Navy would enter into a lease agreement for the same area as Alternative 1. WETA would subsequently construct in-water berths and associated waterside improvements for the operation of a new maintenance facility at the project site within the same lease area as Alternative 1. Although similar to Alternative 1, Alternative 2 would encompass a larger waterside footprint and include two additional berths. Alternative 2 waterside improvements would cover approximately 16,987 square feet of water surface, roughly 2,300 square feet more than Alternative 1, and would include two additional berths as compared to Alternative 1. Similar to Alternative 1, the berths would include concrete floating docks with steel-pipe guide piles and fendering sized to accommodate the ferry vessels. The berths would be provided with basic utility services and connections. Ancillary waterside components, such as lighting and security systems, would also be the same as described above for Alternative 1.

Construction of Alternative 2 would use the same construction equipment, methods, and schedule as described for Alternative 1. As with Alternative 2, WETA would be responsible for obtaining all applicable permits required prior to the construction and operation of the facility. WETA would also be responsible for complying with all applicable local, State, and Federal laws; mitigation and avoidance measures; and permit conditions. The requirement for WETA to obtain all permits and comply with local, State, and Federal laws would be memorialized in the Navy lease agreement.

Under the No Action Alternative, the Navy would not enter into a lease agreement. Without the lease agreement, WETA would not construct and operate the waterside portion of the project site. Construction of the proposed full-service berths and maintenance berths would not occur. Operations at the current maintenance facility would continue.

Other reuse alternatives, including other development scenarios for the project area, were eliminated from consideration because they were not considered feasible or reasonable, given the purpose and need of the Proposed Action.

Environmental Effects: The EA examined the potential environmental consequences of the Proposed Action and any impacts associated with the reasonably foreseeable reuse of the property. Implementation of the Proposed Action, with identified mitigation measures, would not significantly impact the quality of the human or natural environment. The following is a summary of environmental consequences of the Proposed Action (Alternative 1 in the EA), and where applicable, the mitigation measures that will be implemented by the project proponent, WETA.

Water Resources: Prior to construction and operation of the proposed ferry maintenance facility, WETA will obtain all applicable permits (including Sections 401 and 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act permits) required for activities involving placement of fill and structures in the form of piles in jurisdictional and navigable waters of the U.S. Implementation of Best Management Practices (BMPs) and adherence to water quality permits and approvals would minimize adverse effects on water quality from waterside construction activities and facility operation. With the above measures, there would be no significant impact to water resources.

Noise and Vibration: Pile driving and crane operation would produce short-term, minor construction vibration and noise impacts. The type of equipment to be used during operation of the site is not anticipated to noticeably increase noise or vibration levels in the area and would be consistent with levels at the existing nearby maintenance facility. Accordingly, Alternative 1 would have no significant impact on noise and vibration.

Biological Resources: Construction of Alternative 1 would result in short-term, minor, indirect adverse impacts to special-status fish species and their designated critical habitat, and to Essential Fish Habitat. This alternative would have no long-term adverse impacts to these resources, and with implementation of permit measures, terms and conditions in Biological Opinions, BMPs, and Mitigation Measure BIO-1 (Minimize Impacts to Salmonids and Sensitive Aquatic Species during Construction), there would be no significant impact on biological resources.

Cultural Resources: Alternative 1 would have negligible indirect impacts to cultural resources. Mitigation Measures CR-1 through 4 identify specific measures to avoid and minimize impacts to historic resources and to address archaeological resources in the unlikely event they are encountered. With the above measures, there would be no significant impacts to cultural resources.

Hazards and Hazardous Materials: Environmental cleanup on Mare Island is ongoing, and therefore there is potential for impacts resulting from known or unknown environmental issues. Any necessary notifications or restrictions relating to any existing hazardous substances in the submerged lands will be included in the Navy lease agreement. By complying with Mitigation Measure HZ-1 (Compliance with Navy Lease Agreement) and the provisions included in the submerged land lease, as well as the terms and conditions of the permits and approvals WETA has or will obtain, the potential impacts associated with hazards and hazardous materials would not be significant.

Geology: Minor soil displacement during construction would lead to minor, short-term indirect adverse impacts to soils. With compliance with the California Building Code and implementation of Mitigation Measure GEO-1 (Design Level Geotechnical Investigation), there would be no significant impacts to geology.

Land Use: The San Francisco Bay Conservation and Development Commission issued a Major Permit for the project in June, 2014, indicating consistency with the Bay Plan. Because Alternative 1 is consistent with land use development goals in the study area, there would be no short- or long-term indirect adverse impacts on land use. There would be no significant impact on land use.

Other Resource Areas: The Proposed Action would not result in any significant adverse impacts on air quality (including greenhouse gas emissions and climate change), visual, transportation, socioeconomic and utility resources. WETA will be responsible for acquiring any applicable building permits, approvals, and environmental permits prior to development of the property.

Finding: Based on information gathered during preparation of the EA, the Navy finds that implementation of the Proposed Action, with the identified mitigation measures, would not have a significant impact on the human and natural environment and an EIS is not required for the Navy's lease of submerged lands.

The EA addressing this action may be obtained by interested parties at http://www.bracpmo.navy.mil/ or by contacting Navy Base Realignment and Closure Program Management Office, ATTN: Erica Spinelli, 1455 Frazee Road, Suite 900, San Diego, CA, 92108. Phone: (619) 532-0980. Email: erica.spinelli@navy.mil. A limited number of copies of the EA are available to fill single copy requests.

3/13/15
Date

Ms. Kimberly Ostrowski
Director
Navy Base Realignment and Closure
Program Management Office West

Final Environmental Assessment for

The United States Department of the Navy Lease of Submerged Lands at Mare Island to Enable the Construction and Operation of a Ferry Maintenance Facility

Vallejo, California

March 2015

NAVFAC
Naval Facilities Engineering Command

Lease of Submerged Lands at Mare Island to Enable the Construction and Operation of a Ferry Maintenance Facility, Vallejo, California
March 2015

Lead Agency:	United States Department of the Navy
Title of Proposed Action:	Lease of Submerged Lands at Mare Island to Enable the Construction and Operation of a Ferry Maintenance Facility
Affected Jurisdiction:	City of Vallejo, California
Designation:	Final Environmental Assessment

ABSTRACT

This Final Environmental Assessment (EA) presents an analysis of the United States (U.S.) Department of the Navy's (Navy's) Proposed Action to issue a lease of the Navy's submerged lands for use by the San Francisco Bay Area Water Emergency Transportation Authority (WETA). It is not yet known whether the Navy would lease the lands directly to WETA, or to another entity such as the City of Vallejo, which would then sublet the lease area to WETA. The lease area would be located at Mare Island in Vallejo, California. WETA is proposing to construct and operate a ferry maintenance facility that would be located on both the non-Navy landside property and 3.58 acres of the Navy's submerged lands in Mare Island Strait. The Navy's proposed action—the submerged land lease—would enable WETA to use a portion of the Navy's submerged lands for in-water berths at the maintenance facility.

A previous evaluation pursuant to the National Environmental Policy Act (NEPA) was conducted in 1998 by the Navy for the disposal and reuse of surplus Mare Island property, including the submerged lands, which led to the disposal of the majority of the surplus Federal property. However, the Navy still retains the submerged lands pending the completion of environmental clean-up activities. Because the proposed ferry maintenance facility use was not assessed under the previous NEPA documentation, the Navy is conducting this EA to evaluate the potential environmental effects of the lease. Although the Proposed Action is solely granting a lease agreement that would enable the construction and operation of the in-water components of the WETA ferry maintenance facility, the on-land components of the facility are also evaluated in this document to the extent necessary to assess and disclose potential indirect and cumulative effects.

The EA assessed the potential direct, indirect, short-term, long-term, and cumulative impacts on the human environment resulting from the submerged land lease, and the subsequent construction and operation of the waterside components of the ferry maintenance facility. The Proposed Action evaluated in the EA is limited to the Navy's lease of submerged lands and does not include the landside portion of the proposed maintenance facility. However, construction and operation of the landside components of the facility are also evaluated to assess and disclose potential indirect and cumulative effects.

The EA documents the Navy's compliance with the requirements of NEPA, as amended; the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Sections 1500-1508); and Navy procedures for implementing NEPA (32 CFR Part 775).

Resource areas examined in the EA include the physical environment (geology, topography, and soils; groundwater; surface water; air quality and greenhouse gases; noise and vibration; visual resources; transportation; land use), biological resources (i.e., marine biota), cultural resources (historic properties, archaeological resources, and architectural resources); hazards and hazardous materials; socioeconomics; and utilities. The EA also addressed potential cumulative impacts that may result from past, present, and reasonably foreseeable projects in the region.

Consistent with CEQ NEPA regulations (40 CFR Section 1506.6, Public Involvement) and Navy policy, the Draft EA was made available to agencies and the public for a 15-day comment period. This review period provided the opportunity for the public to be involved in the preparation of the EA. No comments were received.

Based on information gathered during preparation of the EA, the Navy has found that implementation of the Proposed Action, with the identified mitigation measures, would not have a significant impact on the human and natural environment.

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Final Environmental Assessment for the United States Department of the Navy Lease of Submerged Lands at Mare Island to Enable the Construction and Operation of a Ferry Maintenance Facility, Vallejo, California

United States Department of the Navy
Naval Facilities Engineering Command
Base Realignment and Closure Program Management Office West

March 2015

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ACRONYMS AND ABBREVIATIONS

Bay Plan	San Francisco Bay Plan
BCDC	San Francisco Bay Conservation and Development Commission
BMP	best management practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
Cal-EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
City	City of Vallejo
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dBA	A-weighted decibels
DoD	Department of Defense
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	executive order
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FMP	fisheries management plan
FONSI	Finding of No Significant Impact
FOSL	Finding of Suitability to Lease
FTA	Federal Transit Administration
GCR	General Conformity Rule
GHG	greenhouse gas
Historic District	Mare Island Historic District
IA	Investigation Area
IRP	Installation Restoration Program
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	day-night average noise level
L_{eq}	equivalent sound level
L_v	vibration level
LMI	Lennar Mare Island
MEC	munitions and explosives of concern
MIDD	Mare Island Dry Docks
MLD	most likely descendant
MLLW	Mean Lower Low Water
MOA	Memorandum of Agreement
MPPEH	Material Potentially Presenting an Explosive Hazard

MSA	Magnuson-Stevens Fishery Conservation and Management Act
Navy	United States Department of the Navy
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_X	oxides of nitrogen
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
OPNAV	Naval Operations
PCB	polychlorinated biphenyl
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PMO	Program Management Office
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation Report
RONA	Record of Non-Applicability
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SFHA	special flood hazard area
SGWMP	Soil and Groundwater Monitoring Plan
SLC	State Lands Commission
SVOCs	semi-volatile organic compounds
SWRCB	State Water Resources Control Board
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USCG	United States Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibel
VGP	Vessel General Permit
VOC	volatile organic compound
waters of the U.S.	waters of the United States
WETA	San Francisco Bay Area Water Emergency Transportation Authority

EXECUTIVE SUMMARY

Proposed Action: Lease of Submerged Lands at Mare Island to Enable the Construction and Operation of a Ferry Maintenance Facility

This Final Environmental Assessment (EA) evaluates the potential direct, indirect, and cumulative impacts on the human and natural environment resulting from the United States Department of the Navy's (Navy's) Proposed Action to lease 3.58 acres of submerged lands at Mare Island, to enable the construction and operation of a ferry maintenance facility in the city of Vallejo, Solano County, California, by the San Francisco Bay Area Water Emergency Transportation Authority (WETA). It is not yet known whether the Navy would lease the lands directly to WETA, or to another entity such as the City of Vallejo (City), which would then sublet the lease area to WETA.

The purpose of the Navy's Proposed Action is to lease submerged lands to enable WETA's construction and operation of the waterside components of a new ferry maintenance facility. This action is needed to assist the local land use authority in effectuating its base reuse and redevelopment, as envisioned in the City's *Mare Island Specific Plan* (City of Vallejo, 2008). The Navy would be responsible for issuing a lease of submerged lands. WETA would be responsible for development, operation, and maintenance of the new facility. In addition, WETA would be responsible for implementation of the mitigation measures identified in this EA, as well the best management practices (BMPs), minimization measures, conservation measures, and other terms and conditions of permits obtained for WETA's project and referenced herein.

Project Study Area

For the purposes of this Final EA, the following terms are used to describe the geographic range of environmental analysis: lease area, study area, and project vicinity. The *lease area* is limited to the footprint of the Navy's proposed submerged land lease. The *study area* comprises the proposed waterside lease area, the proposed landside maintenance facility, and the existing maintenance facility. The *project vicinity* is a larger geographic area that could vary depending on the specific resource. The lease area is submerged land located in the Mare Island Strait between 6th and 7th streets on Mare Island. It is adjacent to, and in the submerged lands of the former Mare Island Naval Shipyard, which is on the western edge of the city of Vallejo in Solano County, California, approximately 30 miles northeast of the city of San Francisco.

Alternatives

Three alternatives have been carried forward for detailed analysis in this EA: Alternative 1, Alternative 2, and the No Action Alternative. Both action alternatives would involve a Navy-issued lease agreement, are located on the same site (the Navy's submerged lands), and have similar maintenance and berthing features. Construction of either action alternative would include relocation and removal of waterside equipment, and landside structures at the current maintenance facility, which is located approximately 0.5 mile from the lease area. The Navy's action is limited to the granting of a lease for use of its submerged lands; the Navy has no role regarding the design or development of the action alternatives.

Alternative 1 (Preferred Alternative)

Although the scope of the Navy's proposed action is limited to granting of the lease agreement for the Navy's submerged lands, the lease would enable the construction and operation of waterside development as a secondary effect of the Proposed Action. In addition, landside components outside the jurisdiction of the Navy would be constructed, operated, and maintained. WETA would be responsible for the construction and operation of the waterside and landside components of the ferry maintenance facility.

The waterside improvements include construction of three full-service berths and one maintenance berth. The berths would be separated by two finger floats and one maintenance float. A fifth berth would be adjacent to the quay wall, and would be used infrequently if a large land-based crane was needed for maintenance and repairs. The berths would include concrete floating docks with steel-pipe guide piles and fendering sized to accommodate the ferry vessels. Utility services, such as fueling, would be provided at each berth. Other components of the waterside facility would include storage, access improvements, and security features. In addition to the new facilities, a service float that is tied to the quay wall at the current maintenance facility would be relocated to the lease area, and would be secured with guide piles. A passenger loading float would also be relocated from the shoreline near the current maintenance facility and secured alongside the quay wall at the proposed site. The waterside facility would be primarily used for overnight moorage, daily fueling, and light maintenance of vessels.

The landside portion of the maintenance facility would involve construction of a new warehouse, rehabilitation of a few existing buildings for adaptive reuse, and construction and installation of new fuel facilities and utilities. The landside area is not owned by the Navy and would not be included in the lease agreement. The landside improvements were evaluated under the California Environmental Quality Act in the *Vallejo-Baylink Ferry Maintenance Facility at Mare Island* Initial Study/Mitigated Negative Declaration (IS/MND), which was approved by the City in 2011 (California State Clearinghouse # 2011022039). The landside improvements are evaluated in this EA as a reasonably foreseeable future action, and are therefore considered as part of the cumulative effects of the alternative.

Upon construction of the waterside and landside improvements, WETA would relocate the existing ferry maintenance facility from its current location on Mare Island to the new site. Alternative 1 would include cleanup and removal of waterside and landside equipment, and landside structures, at the current maintenance facility to the extent that only a paved surface would remain. Reasonably foreseeable future improvements at the new facility would include a warehouse, administration offices, maintenance facilities, fuel storage and operation facilities, and berthing areas.

Alternative 2

Under Alternative 2, the Navy would enter into a lease for the same area as Alternative 1. WETA would subsequently construct in-water berths and associated waterside improvements for the operation of a new maintenance facility at the lease area in the same lease area as Alternative 1. Alternative 2 would also include cleanup and removal of existing waterside and landside equipment, and landside structures at the current maintenance facility, and assumes that construction of future landside improvements would be reasonably foreseeable to occur. The Alternative 2 waterside and landside operations and facilities would be generally the same as those under Alternative 1, but Alternative 2 would encompass a larger waterside footprint to include two additional berths.

No Action Alternative

Under the No Action Alternative, the Navy would not enter into a lease agreement. Without the lease agreement, WETA would not construct and operate the waterside portion of the lease area. Construction of the proposed full-service berths and maintenance berths would not occur. The service float and the loading float would not be relocated from the current maintenance facility to the lease area.

Summary of Potential Environmental Impacts

As described in Chapters 4, 5, and 6, none of the alternatives considered would result in significant impacts to the environment. As the Navy's Proposed Action is limited to issuance of a submerged land lease, no alternative would result in direct impacts to natural, physical, or cultural resources. Table 2-1 presents a comparison of the environmental consequences of Alternative 1, Alternative 2, and the No

Action Alternative, along with applicable mitigation measures. Chapter 4 discloses the potential environmental impacts of the alternatives, which are summarized below.

Geology. Alternatives 1 and 2 would result in minor, short-term indirect adverse impacts to geology (i.e., soils), as a result of temporary, localized soil displacement and associated increased turbidity during construction, particularly during the removal and placement of pilings. With the implementation of Alternative 1, new piles are expected to impact a total area of approximately 210 square feet, and would displace approximately 146 cubic yards of water and 256 cubic yards of soil and bedrock. Alternative 2 would accommodate two additional berthing areas, which would result in a larger project and would therefore result in a minor increase in the amount of waterside soil disturbance during construction when compared to Alternative 1. For both Alternatives 1 and 2, structures would be built in compliance with California Building Codes. To reduce potential environmental effects, the following mitigation measure will be implemented: *GEO-1: Design Level Geotechnical Investigation – Design and construction will address the recommendations made in site-specific design-level geotechnical reports prepared for the project. The geotechnical recommendations will be incorporated into the final plans and specifications for the project and implemented during construction.*

Water Resources. Alternatives 1 and 2 would result in minor, short- and long-term indirect adverse impacts to water quality, associated with placement of new fill (i.e., piles) in Mare Island Strait. In addition, construction activities, such as pile placement, would disturb potentially contaminated sediments, and result in localized, temporary increases in turbidity levels. Operation of the facility could also result in the accidental release of fuels or trash into Mare Island Strait. Because Alternative 1 would result in the addition of a very small amount of fill relative to the total water volume of San Francisco Bay, this alternative would have a minor impact to oxygen levels in the water, circulation, and tidal interchange. Alternative 1 would displace up to 210 square feet of jurisdictional waters of the United States (waters of the U.S.) with the placement of piles. Alternative 2 would encompass a slightly larger waterside footprint (approximately ~~16,000~~ ***16,987*** square feet instead of ~~13,700~~ ***14,687*** square feet)[1] and additional berths, and place slightly more piles into the strait. Implementation of Alternative 2 would displace approximately 85 more square feet of waters of the U.S. compared to Alternative 1. For both Alternatives 1 and 2, implementation of BMPs and adherence to water quality permits and approvals would minimize adverse effects on water quality from waterside construction activities and facility operation.

Air Quality (including Greenhouse Gas Analysis). Alternative 1 would result in short-term adverse impacts to air quality related to construction of the waterside activities at the maintenance facility, which would contribute to emissions of criteria pollutants. Although the General Conformity Rule (GCR) is not applicable to the Proposed Action, construction emissions were nevertheless analyzed to determine whether GCR emission thresholds would be exceeded. Construction emissions associated with Alternative 1 would be well below the applicable GCR threshold emission rates. Alternative 2 would accommodate two additional berthing areas, which would result in slightly greater construction emissions compared to Alternative 1; however, these increased air quality emissions are projected to be well below the GCR thresholds. Alternative 1 would result in approximately 50 metric tons per year of carbon dioxide equivalent from the use of equipment during the construction of waterside improvements. Greenhouse gas (GHG) emissions from construction indirectly associated with Alternative 2 would be slightly higher than those described above for Alternative 1, due to the construction of two additional berths. Operations are anticipated to result in air quality emissions commensurate with current maintenance activities;

[1] As described in Section 1.4.2, *Refined Project Description,* design modifications that occurred after the end of the public review period resulted in approximately 947 square feet of additional water coverage. Amended language related to the design modification in the executive summary is in ***bold italics*** and deleted language is in ~~strikethrough~~.

therefore, there would be negligible indirect adverse air quality or GHG impacts resulting from waterside operations from either action alternative.

Noise and Vibration. Construction of the waterside improvements would generate noise and require pile driving, which would generate groundborne vibration that could potentially cause annoyance to sensitive receptors in the area. Predicted construction noise and vibration levels at the nearest sensitive receptors are lower than the Federal Transit Administration general assessment residential threshold. Therefore, there would be minor, short-term, indirect adverse noise and vibration impacts. Alternative 2 would indirectly result in a larger waterside component; the additional two berthing areas would negligibly increase the noise and vibration generated at the site during construction.

Visual Resources. Alternative 1 would indirectly create visual changes as a result of the construction and operation of the in-water maintenance facility components. The watercraft, barges, and cranes would be consistent with the industrial landscape of water-oriented use. New construction at the site would comply with design guidelines for the reuse of Mare Island. Therefore, construction of the project would not result in adverse indirect visual impacts. Although Alternative 2 would encompass a slightly larger footprint, it would also be visually consistent with the character of the surrounding area, comply with design guidelines for Mare Island, and have a commensurate impact to visual resources compared to Alternative 1.

Transportation. Both Alternatives 1 and 2 would result in commensurate minor, short-term indirect adverse impacts to transportation as a result of the additional vehicles accessing the site during construction. Once operational, traffic would be commensurate with that of the existing ferry maintenance facility at Mare Island. Passengers availing themselves of the limited passenger ferry service would largely be expected to walk or bicycle to the facility from nearby residences or be dropped off, and existing on-street parking would accommodate any passenger vehicles. Traffic impacts from operations would not be significant. Moreover, the new facility would enhance WETA's operations and contribute to its goal of building and operating a seamless transit system that responds to the region's congestion management needs; therefore, both alternatives would have long-term indirect beneficial impacts to transportation.

Land Use. Approval of the submerged land lease would indirectly impact land use during construction and operation of in-water project components. The new waterside facilities would result in construction of new berths and floats as well as the relocation of two existing floats, resulting in placement of additional fill in the strait. These facilities would be a new permanent land use at the project lease area. Both Alternatives 1 and 2 are consistent with land use development goals in the study area; therefore, there would be no short- or long-term indirect adverse impacts on land use from either alternative.

Biological Resources. Alternatives 1 and 2 would result in indirect impacts related to the construction and operation of in-water facilities, including an increase in turbidity, underwater sound, underwater shading, and habitat modification. The construction of two additional berths associated with Alternative 2 would result in slightly greater indirect impacts from waterside structures. In its Biological Opinion, the National Marine Fisheries Service determined that the project would not jeopardize Endangered Species Act-listed species, would not adversely modify or destroy designated critical habitat, and would have minimal effects on Essential Fish Habitat. Similarly, in its Biological Opinion, the U.S. Fish and Wildlife Service determined that while the project may result in relatively small effects to the delta smelt, it would not jeopardize this or other federally listed species or designated critical habitat. Furthermore, the California Department of Fish and Wildlife (CDFW) determined in its Lake or Streambed Alteration Agreement that the project could substantially adversely affect existing fish or wildlife resources; CDFW has therefore included measures in the agreement to protect these resources. With implementation of BMPs and adherence to permit conditions, construction of Alternative 1 would result in minor, short-term indirect adverse impacts to special-status fish species and their designated critical habitat, and to Essential

Fish Habitat. To reduce potential environmental effects, the following mitigation measure will be implemented: *BIO-1. Minimize Impacts to Salmonids and Sensitive Aquatic Species during Construction- WETA will incorporate the following into the construction documents: 1) Construction in Mare Island Strait will be limited to the period from August 1 to October 15 to avoid the migration period for salmonids and other special-status species; and 2) All conservation measures and terms and conditions listed in the 2012 NMFS Biological Opinion, in the 2014 USFWS Biological Opinion, and in the 2014 Amended CDFW Streambed Alteration Agreement (refer to Appendix A).*

Cultural Resources. Alternatives 1 and 2 would have commensurate impacts that could indirectly result in vibration impacts to the historic quay wall; however, based on the structural integrity of the quay wall, and the proposed construction methods and equipment, these impacts are expected to be negligible. In addition, both alternatives would indirectly result in the placement of modern elements within the boundaries of a National Register of Historic Places-listed Historic District. These elements are visually compatible with the existing maritime context of the study area, and would not detract from the historic context of the district or affect components of the district that contribute to its overall significance. To reduce potential environmental effects of the action alternatives, WETA will implement the following avoidance and minimization measures:

- *CR-1: Ensure that the final project design is in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and the Mare Island Historic District Design Guidelines.*

- *CR-2: If historic features or prehistoric archaeological materials are encountered during project construction on the non-Navy-owned landside portion of the project, the procedures outlined in the Archaeological Treatment Plan for Mare Island (PAR Environmental Services, 2000b) shall be followed.*

- *CR-3: If human remains are encountered during construction activities on the non-Navy-owned landside portion of the project, there would be no further excavation or disturbance of the remains, or of the nearby area until the Solano County Coroner has made the necessary findings as to origin, in accordance with Health and Safety Code 7050.5. In accordance with Public Resources Code 5097.98, if the coroner believes the human remains to be those of a Native American, he or she would contact, by telephone, within 24 hours, the Native American Heritage Commission. The Native American Heritage Commission would immediately notify the most likely descendant (MLD). The MLD would inspect the site of the discovery, and may recommend the means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD would complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The remains would not be damaged or disturbed by further development until the County has discussed and conferred with the MLD regarding their recommendations.*

- *CR-4: In the unlikely event that historic properties, prehistoric archaeological materials, or human remains are encountered during construction on Navy-owned submerged lands, WETA shall stop work, secure the site, and immediately contact the City and the Navy. The Navy will include this requirement as a condition in the Navy submerged land lease.*

Hazards and Hazardous Materials. Both Alternatives 1 and 2 would result in commensurate, minor, short- and long-term, indirect, adverse impacts related to hazards and hazardous materials from materials typically associated with commercial and industrial uses. The Navy executed a Final Finding of Suitability to Lease in September 2013, which identifies the notifications and requirements relating to existing hazardous substances at the lease area. To reduce potential environmental effects, the following mitigation measure will be implemented by the Lessee/WETA: *HZ-1: Compliance with Navy Lease*

Agreement – the Lessee will comply with the Navy's submerged land lease agreement, which will contain necessary notifications and restrictions and the requirement that the Lessee conduct construction and operation of the maintenance facility and implementation of the mitigation plan in accordance with all applicable Federal, State, and local laws and regulations.

Socioeconomics. Alternatives 1 and 2 would not result in direct or indirect socioeconomic effects. The alternatives will not introduce any new land uses that could generate pollution or safety hazards in the community. The Proposed Action would not result in substantial adverse impacts related to air quality, noise and vibration, visual resources, or hazardous and regulated materials. Therefore, neither alternative would result in direct or indirect socioeconomic effects, nor result in disproportionately high and adverse impacts to minority or low-income populations.

Utilities. Implementation of either action alternative would not increase demand for public utilities because it would relocate an existing facility, and would not require additional utility services. No utility disruptions are anticipated to be needed during construction; if needed, these disruptions would be temporary and associated with utility tie-ins. Construction and operation of in-water facilities would not disrupt or diminish the quality of public utility services, nor result in utility interruptions, and may be expected to have slightly beneficial impact on utilities as a result of upgrades to the dated utility systems in the immediate vicinity of the project. Implementation of either Alternative 1 or Alternative 2 would also indirectly enhance WETA's operations, supporting its broader goal of building and operating a seamless transit system that responds to the region's congestion management needs. Therefore, both alternatives would result in a long-term, indirect, beneficial impact to utilities.

Cumulative Impacts. As discussed in Chapter 5, when considered along with past, present, and reasonably foreseeable future actions, both Alternative 1 and Alternative 2 would contribute to cumulative impacts; however, the cumulative impacts would not be significant.

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

This Final Environmental Assessment (EA) evaluates the potential environmental consequences resulting from the United States Department of the Navy's (Navy) Proposed Action to lease submerged lands at Mare Island to enable the construction and operation of a ferry maintenance facility by the San Francisco Bay Area Water Emergency Transportation Authority (WETA). It is not yet known whether the Navy would lease the lands directly to WETA, or to another entity such as the City of Vallejo (City), which would then sublet the lease area to WETA.

The results of this Final EA will determine whether an Environmental Impact Statement (EIS) is required, or whether a Finding of No Significant Impact (FONSI) will be issued. This EA has been prepared by the Navy, as lead agency, in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (Title 42 United States Code [USC], 4321, et seq.); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Sections 1500-1508); Navy regulations for implementing NEPA (32 CFR Part 775); the January 2014 Office of the Chief of Naval Operations Environmental Readiness Program Manual (OPNAV M-5090.1); and other applicable Department of Defense (DoD) and Navy policies and guidance.

1.1 PURPOSE AND NEED

The purpose of the Navy's Proposed Action is to lease submerged lands to enable WETA's construction and operation of the waterside components of a new ferry maintenance facility. This action is needed to assist the local land use authority in effectuating its base reuse and redevelopment, as envisioned in the City's *Mare Island Specific Plan* (City of Vallejo, 2008).

1.2 PROJECT STUDY AREA AND BACKGROUND

For the purposes of this EA, the following terms are used to describe the geographic range of environmental analysis:

- Lease area: This area is limited to the footprint of the Navy's proposed submerged land lease.
- Study area: This area comprises the proposed waterside lease area, the proposed landside maintenance facility, and the existing maintenance facility.
- Project vicinity: This is a larger geographic area that could vary, depending on the specific resource.

The lease area evaluated in this EA comprises 3.58 acres of Navy-owned submerged lands in the Mare Island Strait along the shoreline near Waterfront Avenue, between 6th and 7th streets on Mare Island (see Figures 1.2.1 and 1.2.2 for the regional location and the project location, respectively). The study area is located adjacent to and in the submerged lands of the former Mare Island Naval Shipyard, which is on the western edge of the city of Vallejo in Solano County, California, approximately 30 miles northeast of the city of San Francisco.

WETA is proposing to relocate the existing Vallejo ferry maintenance facility from its current location (see Figure 1.2.2) on Mare Island approximately 0.5 mile northwest of the lease area. WETA is proposing to construct and operate a new ferry maintenance facility that would be located on both the Navy's submerged lands in Mare Island Strait and on landside property that was transferred by the Navy to the City on March 26, 2002, and is currently owned by Lennar Mare Island LLC (LMI). To facilitate the development of the new ferry maintenance facility, the Navy would lease 3.58 acres of submerged lands for construction and operation of the waterside components of the ferry maintenance facility. The Navy's proposed action—the submerged land lease—would enable WETA to construct and operate the waterside components of the proposed ferry maintenance facility (e.g., berths) in the Navy's submerged lands.

The former Mare Island Naval Shipyard was in operation from 1854 until the closure of its primary facilities in 1996. The Navy was required to close the shipyard, in accordance with Public Law 101–5 10 (10 USC Section 2687, note) of the Defense Base Closure and Realignment Act of 1990, as amended. Following closure of the naval base's operations, most of the land in the shipyard was declared surplus to the needs of the Federal government, and transferred to various State and local agencies including the City. In some cases, the land was subsequently transferred to private entities for redevelopment. In 1999, the City Council of Vallejo adopted the *Mare Island Specific Plan* as the implementation document for the Reuse Plan governing all land use development on Mare Island. In December 2005, the City Council further adopted the 2005 *Mare Island Specific Plan Amended and Restated*. The Specific Plan has since been amended on two occasions; thus, the 2008 Specific Plan is the current regulatory document for the development of Mare Island (City of Vallejo, 2008).

In 1998, the Navy and the City analyzed the impacts of the disposal and reuse of the shipyard in a Joint EIS/Environmental Impact Report (EIR), as required by Section 102(2)(C) of NEPA, 42 USC Section 4332(2)(C), and the California Environmental Quality Act (CEQA), Cal, Pub. Res. Code, Section 21000, et seq. The Navy issued a Record of Decision for this EIS/EIR on November 5, 1998. The 1998 EIS/EIR envisioned potential marine activities in the shoreline area of Mare Island Strait, but did not specifically include an evaluation of a new ferry maintenance facility as an intended use.

In August of 2001, the City adopted an Initial Study/Mitigated Negative Declaration (IS/MND) for the Baylink Mare Island Ferry Maintenance Facility. Changes were made to the project and a subsequent IS/MND was prepared and approved by the City in May 2011.

1.3 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

This Final EA is required because the Navy still retains ownership of the submerged lands and because the proposed use of the property by WETA for the waterside components of the ferry maintenance facility was not assessed in the Navy's previous NEPA analysis (i.e., the 1998 Joint EIS/EIR).

This Final EA assesses the potential direct, indirect, short-term, long-term, and cumulative impacts on the human environment resulting from the submerged land lease and the subsequent construction and operation of the waterside components of the ferry maintenance facility. The Proposed Action evaluated in this EA is limited to the Navy's lease of submerged lands, and does not include the landside portion of the proposed maintenance facility. However, the on-land components of the facility are also evaluated in this document to the extent necessary to assess and disclose potential indirect and cumulative effects of the waterside components.

This EA documents the Navy's compliance with the requirements of NEPA, as amended; the CEQ regulations implementing NEPA (40 CFR Sections 1500-1508); and Navy procedures for implementing NEPA (32 CFR Part 775), OPNAV M-5090.1, and other applicable DoD and Navy policies and guidance.

Resource areas examined in this EA include the physical environment (i.e., geology, topography, and soils; groundwater; surface water; air quality and greenhouse gases [GHGs]; noise and vibration; visual resources; transportation; land use), biological resources (i.e., marine biota), cultural resources (i.e., historic properties, archaeological resources, and architectural resources), hazardous and regulated materials, socioeconomics, and utilities. The EA also addresses potential cumulative impacts that may result from past, present, and reasonably foreseeable projects in the region.

The information and data used in the preparation of this EA were obtained by

- Reviewing existing documents and studies, including literature, maps, and planning documents;
- Communicating and coordinating with local, State, and Federal stakeholders, officials, and the public; and
- Conducting a site visit

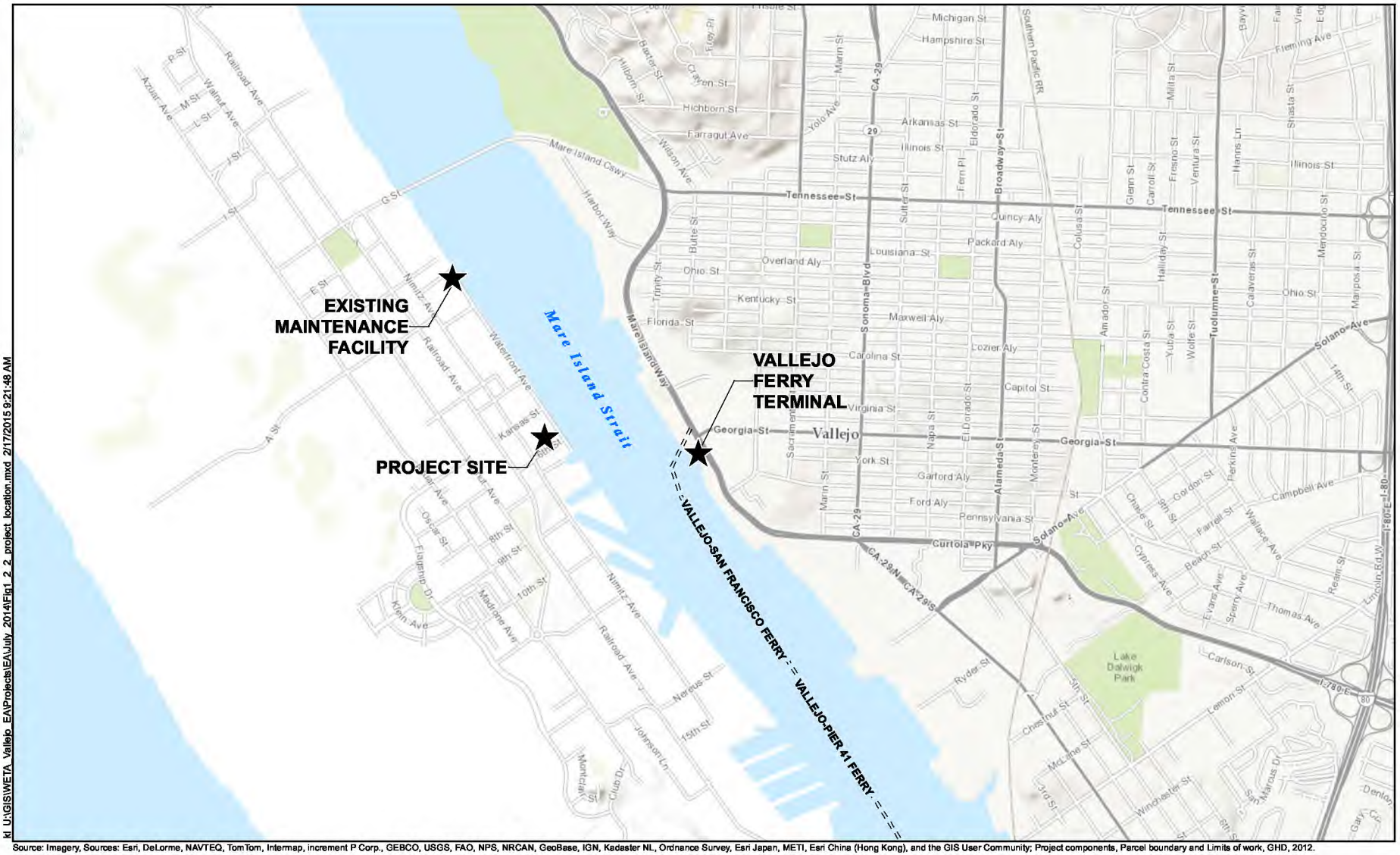
Source: Imagery, Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community; Project components, Parcel boundary and Limits of work, GHD, 2012.

0 3 6 Miles

REGIONAL LOCATION

Vallejo Ferry Maintenance Facility EA
March 2015 Vallejo, California

FIGURE 1.2.1



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Source: Imagery, Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community; Project components, Parcel boundary and Limits of work, GHD, 2012.

0 1,000 2,000 Feet

PROJECT LOCATION

Vallejo Ferry Maintenance Facility EA
March 2015 Vallejo, California

FIGURE 1.2.2

1.4 THE NEPA PROCESS AND PUBLIC INVOLVEMENT

NEPA establishes an environmental review process for actions undertaken by Federal agencies. The review process is intended to help public officials make informed decisions that are based on an understanding of the environmental consequences of Federal actions, and to take actions that protect, restore, and enhance the environment (40 CFR Section 1500.1). Furthermore, the NEPA process recognizes the importance of public involvement in the agency decision-making process.

1.4.1 Public Review of Draft EA

As part of the NEPA process, the Navy released the Draft EA for a 15-day public review and comment period, beginning August 22, 2014, and ending September 8, 2014.

A Notice of Availability (NOA) announcing the review period was published in the legal sections of the *Contra Costa Times* and the *Vallejo Times Herald* on August 22, 23, and 25, 2014; mailed to Federal, State, and local agencies, and interested members of the public; and posted to the Navy's Base Realignment and Closure (BRAC) Program Management Office (PMO) website (http://www.bracpmo.navy.mil).

Federal, State, tribal, and local agencies and members of the public were encouraged to review and comment on the Draft EA during the public review period. Copies of the Draft EA were made available for viewing/downloading from the Navy's BRAC PMO website; by request to the Navy BRAC PMO; and at the John F. Kennedy Library, 505 Santa Clara Street, Vallejo, California, 94590.

No comments on the Draft EA were received.

1.4.2 Refined Project Description

After the public review period closed, WETA refined the design of the proposed maintenance float and finger floats, to better address stability. The minor refinement resulted in widening the maintenance float and finger floats by 2 feet, which would be applicable to both build alternatives (Alternatives 1 and 2). This design modification resulted in approximately 947 square feet of additional water coverage. A minor modification was also made to the configuration of a small work float, adding an additional 40 square feet of water coverage. Together, these refinements result in a total increase of approximately 987 square feet of surface water coverage beyond what was presented in the Draft EA. WETA has coordinated with the resource agencies that have issued permits for the project. As a result of this coordination, minor amendments to the Bay Conservation and Development Commission (BCDC) Major Permit and the CDFW Incidental Take Permit will be required.

This minor design modification results in a negligible increase to the direct, indirect, and cumulative environmental impacts presented in the Draft EA for both Alternative 1 and Alternative 2. Based on coordination with resource and permitting agencies, no changes are necessary to resource agency permit conditions and mitigation measures presented in the Draft EA.

The text of the remainder of this Final EA is amended to address the design modification as applicable (amended language in ***bold italics***; deleted language in ~~strikethrough~~).

1.5 REGULATORY OVERVIEW

NEPA requires Federal agencies to consider environmental consequences in their decision-making process. CEQ regulations mandate that all Federal agencies use a systematic interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment. These Federal

regulations establish both the administrative process and substantive scope of the environmental impact evaluation, which is designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. In addition to NEPA, the CEQ, and Navy regulations, this Final EA considers applicable laws, regulations, and executive orders (EOs), including the following:

- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Coastal Zone Management Act (CZMA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Endangered Species Act (ESA)
- Marine Mammal Protection Act
- Migratory Bird Treaty Act
- National Historic Preservation Act (NHPA)
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act
- EO 11988, Floodplain Management
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter provides a detailed description of the alternatives evaluated in this Final EA: Alternative 1, Alternative 2, and the No Action Alternative.

2.1 IDENTIFICATION OF ALTERNATIVES

As stated in Section 1.1, Purpose and Need, the purpose of the Navy's Proposed Action is to lease submerged lands to enable WETA's construction and operation of the waterside components of a new ferry maintenance facility. This action is needed to assist the local land use authority in effectuating its base reuse and redevelopment, as envisioned in the 2008 *Mare Island Specific Plan.* The relocated maintenance facility was initially sponsored by the City; however, the project was put on hold due to a lack of funds. The City subsequently transitioned ownership of the Vallejo ferry service to WETA in 2012. WETA evaluated its needs, and proposed a smaller maintenance facility. The waterside portion of the project would require a lease from the Navy. The granting of this lease is the Proposed Action, evaluated in this EA for two action alternatives. The smaller maintenance facility proposed in 2012 by WETA is Alternative 1, which is the Preferred Alternative. The larger waterside project initially proposed by the City is Alternative 2. The Navy's action is limited to the granting of a lease for use of its submerged lands; the Navy has no role regarding the design or development of the action alternatives. These action alternatives were selected because they are centrally located on Mare Island and are close to the existing Vallejo Ferry Terminal, and because both could satisfy the purpose and need of the Proposed Action.

2.2 DESCRIPTION OF ALTERNATIVES

Three alternatives have been carried forward for detailed analysis in this EA: Alternative 1 (see Figure 2.2.1), Alternative 2 (see Figure 2.2.2.), and the No Action Alternative. Both action alternatives would involve a Navy-issued lease agreement, are located on the same site (the Navy's submerged lands), and have similar maintenance and berthing features. Alternative 2, however, would construct two additional vessel berths, for a total of seven in the same lease area as Alternative 1. Construction of either action alternative would include relocation of the existing service and passenger loading floats from the current maintenance facility (Figure 2.2.1). In 2011, the City completed an IS/MND for the originally proposed maintenance facility, in compliance with CEQA; as part of that process, several measures to minimize and mitigate environmental impacts were identified. These measures are incorporated into the project descriptions for the action alternatives described below; however, WETA—not the Navy—would be responsible for implementing the mitigation measures and permit conditions required for construction and operation of the project.

Under the No Action Alternative, the Navy would not issue a lease agreement; this represents future conditions without the project—that is, the future if neither of the action alternatives is implemented or constructed. The No Action Alternative does not meet the project purpose and need, but is considered in this EA as required by NEPA. These alternatives are described in more detail below.

2.2.1 Alternative 1 (Preferred Alternative)

Alternative 1 is the issuance of a 3.58-acre lease agreement for a portion of Navy-owned submerged lands for the construction and operation of the new facility's in-water components on Mare Island, in Vallejo, California. WETA would be the owner and operator of the facility. Although the scope of the Navy's proposed action is limited to the granting of the lease agreement for the Navy's submerged lands, the lease would enable construction and operation of the waterside development as a secondary effect of the Proposed Action. In addition, landside components, outside the jurisdiction of the Navy, would be constructed, operated, and maintained. Therefore, this section provides a description of the waterside and landside components to ensure a thorough assessment of secondary/indirect and cumulative environmental impacts. WETA would be responsible for the construction and operation of the land- and water-side components of

the ferry maintenance facility. In the event that the Navy grants the submerged land lease, WETA would be responsible for obtaining all applicable permits required prior to the construction and operation of the facility. WETA would also be responsible for complying with all applicable local, State, and Federal laws; mitigation and avoidance measures; and permit conditions. The requirement for WETA to obtain all permits and comply with local, State and Federal laws would be memorialized in the lease agreement.

Upon construction of the waterside and landside improvements, WETA would relocate the existing Vallejo ferry maintenance facility from its current location on Mare Island to the new site (Figure 2.2.1). The proposed maintenance facility would serve essentially the same purpose as the existing maintenance facility, but would be located on a more suitable site. The existing Vallejo Ferry Terminal would not be moved or altered as a result of the Proposed Action. Alternative 1 would include cleanup and removal of waterside and landside equipment, and landside structures at the current maintenance facility, to the extent that only a paved surface would remain. Reasonably foreseeable future improvements at the new facility would include a warehouse, administration offices, maintenance facilities, fuel storage and operation facilities, and berthing areas.

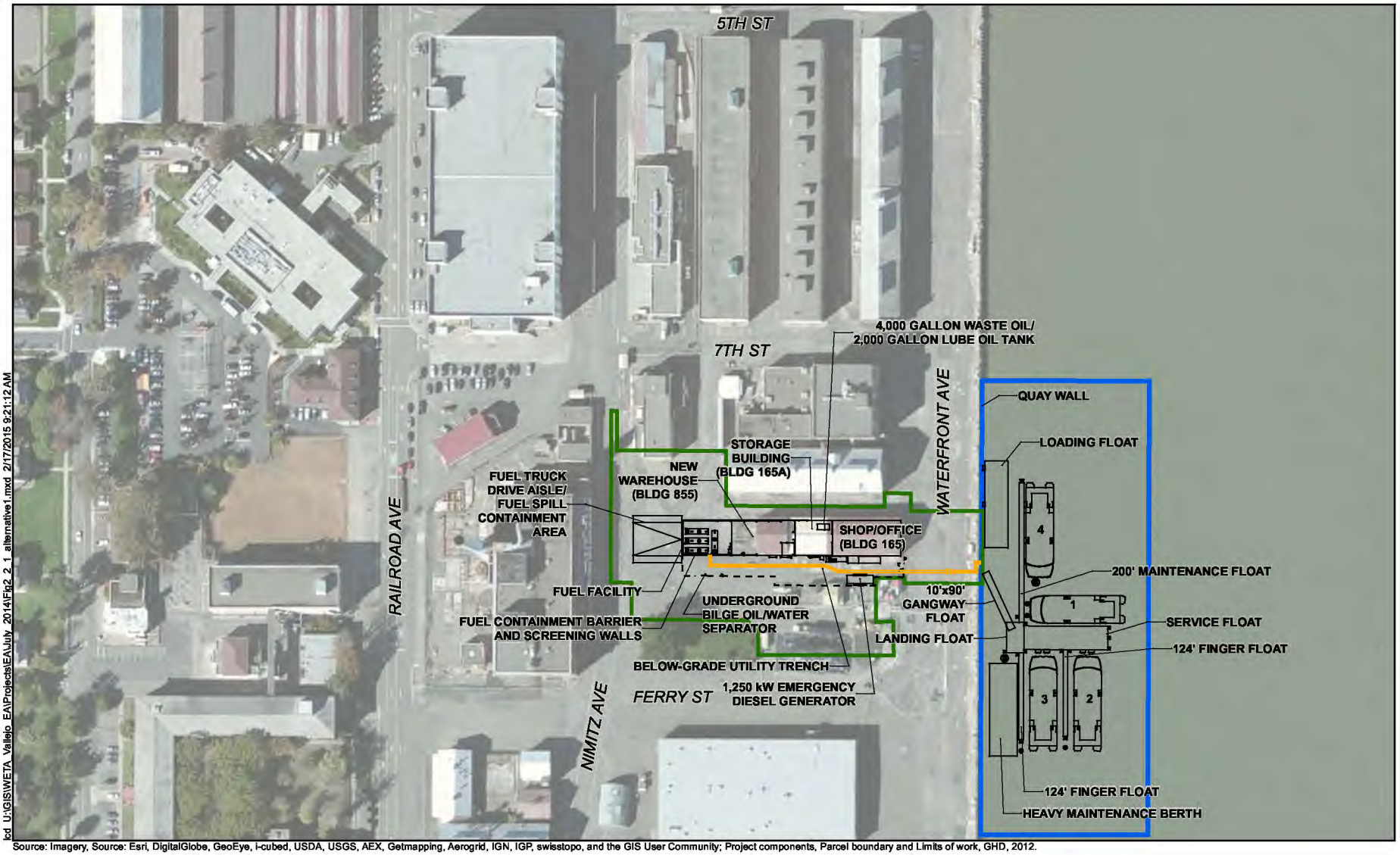
Waterside Improvements

The waterside improvements would cover approximately ~~13,700~~ ***14,687*** square feet of water surface. This total would include approximately ~~7,800~~ ***8,787*** square feet of newly constructed facilities, with the remaining 5,900 square feet consisting of the existing service float (4,080 square feet), and a loading float (1,800 square feet) that would be relocated from the current maintenance facility for reuse at the new site. These facilities are further described below.

The waterside improvements include construction of three full-service berths and one maintenance berth for the vessels. The berths would be separated by two 124-foot-long finger floats and one 200-foot-long maintenance float, and would span approximately 450 linear feet along the waterfront (Figure 2.2.1). A fifth berth would be adjacent to the quay wall, and would be used infrequently if a large land-based crane was needed for heavy maintenance and repairs. The berths would include concrete floating docks with steel-pipe guide piles, and fendering sized to accommodate the ferry vessels. Basic utility services, such as fueling, potable water, shore power, sewage disposal, and hose bibs to wash down the vessels, would be provided at each berth. In addition, the three full-service berths would have utility connections for bilge water, waste oil, lube oil, and compressed air. Other components of the waterside facility would include lighting, power, a tool shed, ship's store shed, diver access platform, access gangway, security systems, communications systems, main gangway, access portal, and roll-up security gate.

Construction of the new waterside improvements would require installation of 38 piles, ranging in diameter from 12 to 42 inches. However, because project design would be determined by the contractor during final design, the proposed maintenance facility has been designed and permitted with a 10 percent contingency. Therefore, this Final EA evaluates up to 40 piles, resulting in 210 square feet of total fill. These piles would displace 146 cubic yards of water and 256 cubic yards of soil, and would displace up to 210 square feet of waters of the United States (waters of the U.S.).

In addition to the new facilities identified above, a 4,080-square-foot service float that is currently tied to the quay wall at the current maintenance facility would be relocated to the lease area, and would be secured with guide piles. This service float would allow direct maintenance access to the three full-service berths. The service float would include lights, power, a shed for tools and equipment, a ship's store shed, access, gates, handrails, gangways and ramping for passenger loading, and security systems. An 1,800-square-foot passenger loading float would also be relocated from the shoreline near the current maintenance facility, and secured alongside the quay wall at the proposed site. This float is currently used during periodic maintenance dredging operations at the Vallejo Ferry Terminal, on the opposite side of Mare Island Strait from the lease area. No other waterside work would occur at the current maintenance facility.



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Source: Imagery, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; Project components, Parcel boundary and Limits of work, GHD, 2012.

- Pile
- Project components
- Fence
- Limit of landside work/construction staging
- Below-grade utility trench (to be completed by others)
- Navy lease boundary over submerged land

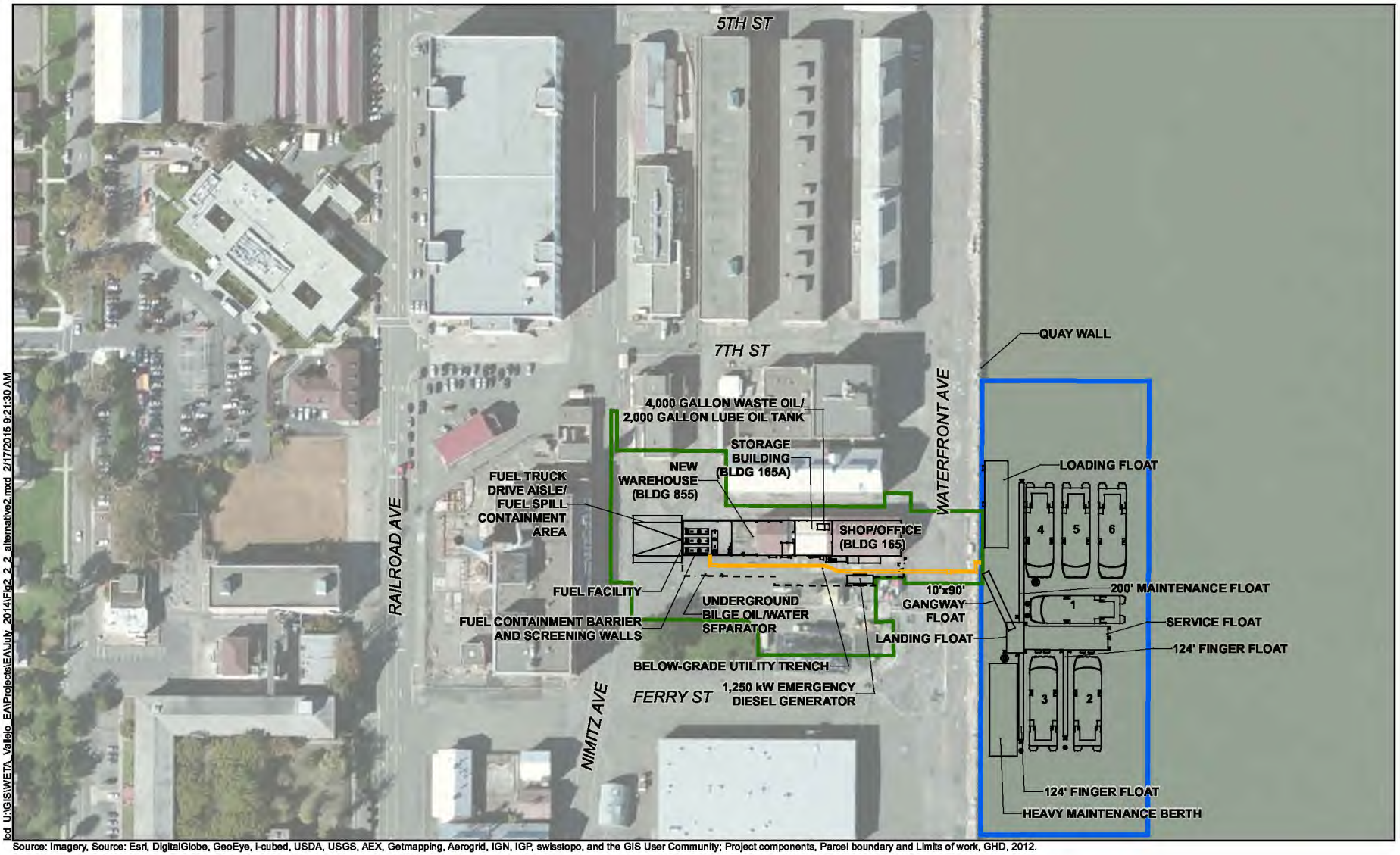
0 100 200 FEET

ALTERNATIVE 1

Vallejo Ferry Maintenance Facility EA
Vallejo, California

March 2015

FIGURE 2.2.1



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- Pile
- Project components
- Fence
- Limit of landside work/construction staging
- Below-grade utility trench (to be completed by others)
- Navy lease boundary over submerged land

0 100 200 FEET

ALTERNATIVE 2

Vallejo Ferry Maintenance Facility EA
Vallejo, California

March 2015

FIGURE 2.2.2

Waterside Construction Equipment and Schedule

Construction of the waterside improvements would require alteration of seven piles near the quay wall at the lease area. At the location of the proposed gangway landing, seven existing timber fender piles would be cut at Mean Higher High Water elevation (+5.92 feet Mean Lower Low Water [MLLW]) and the top sections removed along with approximately 40 feet of the existing timber waler (beam) and blocks. Approximately a 5-foot-3-inch length of each fender pile would be removed. The section of remaining fender piles below elevation +5.92 feet would be secured by fastening a new timber waler to the top of each pile and then securing the ends of the new waler to the complete fender pile on both sides of the 40-foot section.

Construction equipment for the waterside improvements would include a barge-mounted crane with pile-driving equipment, a tug boat for maneuvering the crane barge, up to four small work boats, two floating work platforms, and an equipment barge tied to the crane barge. A vibratory hammer may be used for pile driving where this construction method is suitable, based on the characteristics of the substrate at each pile. However, use of an impact hammer and rotary drill are anticipated to be required to install the piles to a sufficient depth in the underlying bedrock. If use of a rotary drill is necessary, the pile would remain in place and the drilling equipment would be inserted into the pile. All drilling would occur in the pile, and drill cuttings would remain in the pile or would be transferred to a barge for testing and disposal.

Construction for the waterside improvements would occur between August 1 and October 15.

Waterside Operations

The waterside facility would be primarily used for overnight moorage, daily fueling, and light maintenance of WETA vessels. Light maintenance work would involve vessel repairs that do not require heavy equipment, or removal of major vessel components; such heavy maintenance activities would occur on an infrequent basis.

Passenger loading and unloading could occur at the proposed maintenance facility. Currently, San Francisco–bound vessels depart the existing maintenance facility located on Mare Island and head across the Mare Island Strait to the existing Vallejo Ferry Terminal on route to San Francisco. Passenger service would be provided on existing scheduled trips between the maintenance facility and the existing Vallejo Ferry Terminal for trips to and from downtown San Francisco. Primary passenger service would continue to occur at the existing terminal. Once the proposed project is operational, WETA estimates 60 passengers could be accommodated per vessel trip on regularly scheduled arrivals and departures between Mare Island and the Vallejo Ferry Terminal. Passenger service would be a limited service, with three departure times in the morning and three in the afternoon, and would be accommodated by current services and vessels.

Landside Improvements

As discussed above, the landside area is not owned by the Navy and would not be included in the lease agreement. The landside portion of the maintenance facility would involve construction of a new warehouse, rehabilitation of a few existing buildings for adaptive reuse, and construction and installation of new fuel facilities and utilities. The landside improvements were evaluated under CEQA in the *Vallejo-Baylink Ferry Maintenance Facility at Mare Island* IS/MND, which was approved by the City in 2011 (California State Clearinghouse # 2011022039). The landside improvements are evaluated in this EA as a reasonably foreseeable future action, and are therefore considered as part of the cumulative effects of the Proposed Action. Refer to Chapter 5 *Cumulative Impacts,* for a description of other past, present, and reasonably foreseeable future actions that were considered as part of the cumulative impact assessment.

Construction Methods and Pollution Prevention

Construction staging areas would be located on site. Standard best management practices (BMPs) for pollution prevention and construction management would be employed during construction, including measures to minimize the potential for dust, erosion, water quality degradation, and release of hazardous substances at the waterside facilities. The in-water portions of construction would comply with BMPs; in addition, WETA would comply with mitigation measures, and other requirements contained in various permits obtained prior to initiation of construction, as summarized below, referenced in Chapter 4, and fully documented in Appendix A (note mitigation required under more than one permit is not repeated). ***WETA has coordinated with applicable resource agencies to address the design refinements presented in Section 1.4.2. Based on this coordination, there are no changes to the resource agency permit conditions and mitigation measures presented below.***

California Department of Fish and Wildlife (CDFW) – Streambed Alteration Agreement (June 2014 amendment; ***second amendment in process)***

- In-channel work will be confined to the approved work window[2] (i.e., August 1 to October 15).
- WETA will conduct an employee biological resources orientation program.
- A CDFW-approved biologist will monitor pile-driving events.
- Temporary and permanent piles will be a maximum of 42 inches and will be set using a vibratory hammer only, where feasible.
- CDFW-approved Hydroacoustic Minimization/Mitigation Plan and Hydroacoustic Monitoring Plan will be implemented.
- Mechanical equipment operated in the waterway will not be submerged to a point above any axle.
- Poured concrete will be excluded from the wetted channel for a period of 30 days after it is poured. Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If a sealant is used, water will be excluded from the site until the sealant is dry.
- Equipment or vehicles driven and/or operated in or adjacent to the waterway will be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic life, wildlife, or riparian habitat.
- Staging and storage areas for equipment, materials, fuels, lubricants, and solvents will be located outside of the stream channel and banks.
- Hazardous or toxic materials will be in water-tight containers or removed from the site.
- Debris, soil, silt, or other substances that could be hazardous to aquatic life will be prevented from contaminating the soil and/or entering the waters of the State.
- Prepare and implement an Accidental Spill and Discharge Plan.

[2] Work window restrictions varied by resource agency and resource. These windows have been combined and are represented in the text as the only periods allowed under all permits; work windows identified in individual permit authorizations may therefore be larger than that described herein.

- Provide pre- and post-project photographs of the project site.

National Marine Fisheries Service (NMFS) – April 2012 Biological Opinion

- Prepare and submit plans and reports regarding the construction of the proposed project and the results of the fisheries and hydroacoustic monitoring program.

U.S. Fish and Wildlife Service (USFWS) – April 2014 Biological Opinion

- Implement a water pollution control/spill contingency plan.
- Pile driving with an impact hammer will employ a "soft start" technique. The soft start technique requires that the initial strikes of a piling with an impact hammer not be performed at full force but at a significantly reduced force that slowly builds to full force over several strikes.
- Unconfined bubble curtains will be used during the installation of all steel piles to reduce noise levels.
- Minimize adverse effects to the delta smelt.

Regional Water Quality Control Board (RWQCB) – August 2013 Water Quality Certification

- Implement appropriate BMPs during construction activities to minimize construction debris, specifically creosote-treated wood, from entering waterways.
- Implement appropriate BMPs to minimize erosion sedimentation, turbidity, and pollutant transport to waters of the State during construction of the project.
- No construction-related materials or wastes, oil or petroleum products, or other organic or earthen material will enter into, or be placed where it may be washed by rainfall or runoff into, waters of the State. When operations are completed, any excess material will be removed from the work area and any areas adjacent to the work area where such material may be washed into waters of the State.
- Work in waters of the State will be completed in a manner that minimizes impacts to beneficial uses and habitat; measures will be employed to minimize disturbances that will adversely impact the water quality of waters of the State. No fueling, cleaning, or maintenance of vehicles or equipment will take place in any areas where accidental discharge to waters of the State may occur.

CEQA IS/MND (Adopted May 2011)

- Minimize impacts to salmonids and sensitive aquatic species during construction.
- Design-level geotechnical investigation design and construction will address the recommendations made in site-specific, design-level geotechnical reports prepared for the project.

Refer to Chapter 4, Environmental Consequences, for a description of other requirements and approvals (such as Navy's lease and Finding of Suitability to Lease [FOSL]) needed for project implementation.

2.2.2 Alternative 2

Under Alternative 2, the Navy would enter into a lease agreement for the same area as Alternative 1. WETA would subsequently construct in-water berths and associated waterside improvements for the operation of a new maintenance facility in the same lease area as Alternative 1. WETA would be the owner and operator of the facility. In the event that the Navy grants the submerged land lease under

Alternative 2, WETA would be responsible for complying with all applicable local, State, and Federal laws; mitigation and avoidance measures; and permit conditions.

Upon construction of the waterside and landside improvements, WETA would relocate the existing Vallejo ferry maintenance facility from its current location to the new site. Alternative 2 would also include cleanup and removal of existing waterside and landside equipment, and landside structures at the current maintenance facility, and assumes that construction of the same reasonably foreseeable future landside improvements would occur.

Alternative 2 would encompass a larger waterside footprint, and would include two additional berths and approximately 54 piles (at least 14 more than Alternative 1) when compared to Alternative 1. Similar to Alternative 1, the berths would include concrete floating docks with steel-pipe guide piles and fendering, sized to accommodate the ferry vessels. The berths would be provided with basic utility services and connections. Ancillary waterside components, such as lighting and security systems, would also be the same as described above for Alternative 1. Alternative 2 would also include relocation of the service float and passenger loading float from the current maintenance facility. Alternative 2 waterside improvements would cover approximately ~~16,000~~ ***16,987*** square feet of water surface (see Figure 2.2.2), roughly 2,300 square feet more than Alternative 1. Alternative 2 and would displace up to 295 square feet of waters of the U.S., 85 square feet more than Alternative 1.

Construction of Alternative 2 would use the same construction equipment, methods, and schedule as described for Alternative 1. As with Alternative 1, standard BMPs for pollution prevention and construction management would be employed during construction, including measures to minimize the potential for dust, erosion, water quality degradation, and release of hazardous substances at the waterside facilities. WETA would comply with mitigation measures, and other requirements contained in permits obtained prior to initiation of construction.

The Alternative 2 waterside and landside operations and facilities would be generally the same as Alternative 1. The waterside facility would be primarily used for overnight moorage, daily fueling, and light maintenance of WETA vessels. Passenger loading and unloading could occur at the proposed maintenance facility, in the same manner and frequency as described above for Alternative 1. The existing Vallejo Ferry Terminal would not be moved or altered as a result of Alternative 2.

2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Navy would not enter into a lease agreement. Without the lease agreement, WETA would not construct and operate the waterside portion of the lease area. Construction of the proposed full-service berths and maintenance berths would not occur. The service float and the loading float would not be relocated from the current maintenance facility to the shoreline of the lease area. Operations at the current maintenance facility would continue.

2.4 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION AND OTHER ALTERNATIVES

Table 2-1 presents a comparison of the environmental consequences of Alternative 1, Alternative 2, and the No Action Alternative.

Table 2-1
Environmental Consequences of Alternatives

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Geology	No significant impact. No direct geology impacts. With implementation of GEO-1, minor, short-term, indirect adverse impacts to soils would occur, and there would be no impact to seismic hazards.	No significant impact. No direct geology impacts. With implementation of GEO-1, minor, short-term, indirect adverse impacts to soils would occur, and there would be no impact to seismic hazards. Impacts to soils would be slightly greater than Alternative 1.	No significant impact. No direct or indirect geology impacts.
Water Resources	No significant impacts to water quality or floodplains. No direct impacts related to water resources. With implementation of BMPs and adherence to permit conditions, Alternative 1 would result in minor short- and long- term indirect adverse effects to water quality.	No significant impacts to water quality or floodplains. No direct impacts related to water resources. With implementation of BMPs and adherence to permit conditions, Alternative 2 would result in slightly more fill than Alternative 1; and result in minor short- and long- term indirect adverse effects to water quality.	No significant impact. No direct or indirect impacts related to water resources.
Air Quality (Including GHG Analysis)	No significant impact. No direct impacts on air quality or GHG emissions. Construction of the waterside improvements would result in minor, short-term, indirect adverse air quality impacts. Although not applicable to the Proposed Action, emissions would be below general conformity rule thresholds, and there would be no significant indirect adverse impacts to air quality. Alternative 1 would have minor, short-term indirect impacts, and no significant long-term impacts related to GHG.	No significant impact. No direct impacts on air quality or GHG emissions. Construction of the waterside improvements would result in minor short-term indirect adverse air quality impacts. Although not applicable to the Proposed Action, emissions would be below general conformity rule thresholds, and there would be no significant indirect adverse impacts to air quality. Alternative 2 would have minor, short-term indirect impacts, and no significant long-term impacts related to GHG. Alternative 2 would require additional construction efforts and therefore would result in slightly more indirect adverse impacts than Alternative 1.	No significant impact. No direct or indirect air quality emissions or GHG impacts.

Table 2-1
Environmental Consequences of Alternatives

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Noise and Vibration	No significant impact. No direct impacts and minor, short-term, indirect adverse noise and vibration impacts.	No significant impact. No direct impact; Alternative 2 would require additional construction efforts and therefore would result in slightly greater short-term, indirect adverse impacts than Alternative 1.	No significant impact. No direct or indirect noise and vibration impacts.
Visual Resources	No significant impact. No direct impacts on visual resources. Alternative 1 would result in no adverse indirect impacts, and would provide long-term, indirect beneficial impacts to visual resources.	No significant impact. No direct impacts on visual resources. Implementation of Alternative 2 would result in no adverse indirect impacts, and would provide long-term, indirect beneficial impacts to visual resources, commensurate with Alternative 1.	No significant impact. No direct or indirect impacts on visual resources.
Transportation	No significant impact. No direct impacts on transportation. Alternative 1 would have minor, short-term, indirect adverse impacts to transportation, and would provide a long-term, indirect beneficial impact to transportation.	No significant impact. No direct impacts on transportation. Alternative 2 would have minor, short-term, indirect adverse impacts to transportation, and would provide a long-term, indirect beneficial impact to transportation, commensurate with Alternative 1.	No significant impact. No direct or indirect impacts on transportation.
Land Use	No significant impact. No direct or indirect adverse impacts.	No significant impact. No direct or indirect adverse impacts.	No significant impact. No direct or indirect impacts.

Table 2-1
Environmental Consequences of Alternatives

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Biological Resources	No significant impact. No direct impacts to biological resources. With implementation of BMPs, adherence to permit conditions, and implementation of BIO-1, Alternative 1 would result in minor, short-term, indirect adverse impacts to special-status fish species and their designated critical habitat, and EFH. This alternative would not jeopardize ESA-listed species; would not adversely modify or destroy critical habitat; would have minimal impacts to EFH, and would result in relatively small effects to the delta smelt.	No significant impact. No direct impacts to biological resources. With implementation of BMPs, adherence to permit conditions, and implementation of BIO-1, Alternative 2 would result in minor, short-term, indirect adverse impacts to special-status fish species and their designated critical habitat, and EFH. This alternative would not jeopardize ESA-listed species, would not adversely modify or destroy critical habitat, would have minimal impacts to EFH, and would result in relatively small effects to the delta smelt. Due to the larger footprint and additional piles, impacts would be slightly greater than Alternative 1.	No significant impact. No direct or indirect impacts to biological resources.
Cultural Resources	No significant impact. No direct impacts would occur. With implementation of CR-1, CR-2, CR-3, and CR-4, Alternative 1 would have negligible indirect impacts to cultural resources.	No significant impact. No direct impacts would occur. With implementation of CR-1, CR-2, CR-3, and CR-4, Alternative 2 would have negligible indirect impacts to cultural resources. Impacts would be commensurate with Alternative 1.	No significant impact. No direct or indirect impacts to cultural resources.
Hazards and Hazardous Materials	No significant impact. No direct impacts related to hazards and hazardous materials. With implementation of HZ-1, Alternative 1 would result in minor short- and long-term indirect adverse impacts related to hazardous and regulated materials.	No significant impact. No direct impacts related to hazards and hazardous materials. With implementation of HZ-1, Alternative 2 would result in minor short- and long-term indirect adverse impacts related to hazardous and regulated materials. Impacts would be commensurate with Alternative 1.	No significant impact. No direct or indirect impacts related to hazards and hazardous materials.
Socioeconomics	No significant impact. No direct or indirect impacts related to socioeconomics.	No significant impact. No direct or indirect impacts related to socioeconomics.	No significant impact. No direct or indirect impacts to socioeconomics.

Table 2-1
Environmental Consequences of Alternatives

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Utilities	No significant impact. No direct impacts related to utilities. Alternative 1 would result in no short-term adverse indirect impacts to utilities, and substantial long-term beneficial indirect impacts to utilities.	No significant impact. No direct impacts related to utilities. Alternative 2 would result in no short-term adverse indirect impacts to utilities, and substantial long-term beneficial indirect impacts to utilities. Impacts would be commensurate with Alternative 1.	No significant impact. No direct or indirect impacts related to utilities.

Notes:
GHG = greenhouse gas; EFH = Essential Fish Habitat

3.0 AFFECTED ENVIRONMENT

This chapter summarizes the existing environment for relevant environmental resources potentially impacted by the alternatives. The chapter provides an environmental baseline of each resource category, and the conditions of the study area at the time this document was prepared. The affected environment is essentially the same for both Alternative 1 and Alternative 2. The regulatory framework of applicable laws, ordinances, regulations, and guidance pertinent to the resource category is also presented, where appropriate.

The resources analyzed in this Final EA include geology, topography, and soils; groundwater; surface water; air quality; noise and vibration; visual resources; transportation; land use; biological resources; cultural resources; hazards and hazardous materials; socioeconomic environment; and utilities. An analysis of the potential direct and indirect impacts on these resources is presented in Chapter 4. The Final EA also addresses potential cumulative impacts that may result from implementation of alternatives along with other past, present, and reasonably foreseeable projects in the region (Chapter 5).

Based on the geographic setting of the project area, and the nature of the action alternatives, the following resources are not present or have no potential to be impacted by the action alternatives: farmland, marine mammals, sacred sites, sole-source aquifers, and wetlands. Therefore, these resource areas and their associated regulatory context (e.g., Farmland Protection Policy Act, Marine Mammal Protection Act) are not addressed in this document.

3.1 PHYSICAL ENVIRONMENT

3.1.1 Geology

This section discusses conditions related to geology, topography, soil resources, and seismic conditions associated with implementation of the project alternatives.

Regulatory Setting

The Alquist-Priolo Earthquake Fault Zoning Act requires the delineation of zones along active faults in California. The main purpose of the Alquist-Priolo Act is to prevent the construction of buildings to be used for human occupancy on the surface trace of active faults. The Act only addresses the hazard of surface fault rupture, and is not directed toward other earthquake hazards. Cities and counties must regulate certain development projects in the zones, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future ground-surface displacement. The California Geological Survey publishes maps of the active faults in the Bay Area. These maps meet the requirements of the Alquist-Priolo Earthquake Fault Zoning Act, and depict fault traces that can rupture the surface.

Existing Conditions

Geotechnical investigations completed at the lease area documented the presence of native soil and bedrock to the maximum depths explored—about 31.5 to 62 feet below the water surface elevation. Very soft to soft Bay Mud consisting of silt and clay was found 14 to 15 feet from the top of the boring sample. Stiff to very stiff and/or medium-dense sandy silt, sandy clay, and silty sand were encountered beneath the Bay Mud to depths of about 23 and 43 feet below the water surface elevation. Weak to friable siltstone bedrock was encountered to the maximum depths explored (Kleinfelder, 2011).

Seismic activity can result in fault rupture, strong ground shaking, and ground failure. The site is not located on a known active earthquake fault or in an Alquist-Priolo Earthquake Fault zone, so the potential

for ground rupture is considered low. Although future faulting is possible in areas where no faults previously existed, this risk is considered low. The study area is in a seismically active area surrounded by many earthquake faults. The probability of a magnitude 6.7 or greater earthquake within the next 30 years in the Bay Area is 63 percent (USGS, 2012); therefore, the study area could experience strong ground shaking at some time within the next 30 years. Ground shaking is a function of the magnitude and intensity of an earthquake, a site's distance from the epicenter, and local geologic conditions. The study area is located in an area that would be subject to strong to very strong ground shaking in the event of a major earthquake on a nearby fault (ABAG, 1995; Winzler & Kelly, 2011).

3.1.2 Water Resources

This section identifies conditions related to hydrology and water quality associated with implementation of the project alternatives.

Regulatory Setting

The Federal CWA (33 USC Section 1257 et seq.) requires states to set standards to protect water quality. The objective of the Federal CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Specific sections of the CWA control discharge of pollutants and wastes into marine and aquatic environments.

CWA Section 311, as amended by the Oil Pollution Act of 1990, provides for spill prevention requirements, spill reporting obligations, and spill response planning and authorities. It regulates the prevention and response to accidental releases of oil and hazardous substances into navigable waters, such as Mare Island Strait; on adjoining shorelines; or affecting natural resources belonging to or managed by the United States. The United States Coast Guard (USCG) is responsible for regulations and enforcement related to vessels and marine transportation, and the United States Environmental Protection Agency (U.S. EPA) is responsible for non-transportation–related facilities and onshore operations.

Under Section 401 of the CWA, water quality certification is required from the State for any activity needing a Federal permit or license because it may result in discharge into navigable waters, such as Mare Island Strait. The certification must indicate that the activity will comply with the applicable State water quality standards. WETA filed an Application for 401 Water Quality Certification and/or report of Waste Discharge with the San Francisco Bay RWQCB on August 6, 2012, for the Vallejo-Baylink Ferry Maintenance Facility Project for a larger version of the Preferred Alternative, and this larger version of the Preferred Alternative is evaluated in this Final EA as Alternative 2. If an action alternative is implemented, this application would be revised to reflect changes associated with the waterside improvements, if necessary.

Point-source discharges to surface water are regulated by Section 402 of the CWA through requirements set forth in specific or general National Pollutant Discharge Elimination System (NPDES) permits, such as the NPDES General Construction Permit and the General Industrial Permit described below. Stormwater discharges associated with construction activities and certain categories of industrial activities, as well as incidental non-stormwater discharges associated with construction, fall under this act, and are addressed through general NPDES permits. In California, requirements of the CWA regarding regulation of point-source discharges and stormwater discharges are delegated to the State Water Resources Control Board, and administered by the nine RWQCBs. Under California's NPDES program, any waste discharger subject to the NPDES program must obtain coverage under the appropriate general NPDES permit from the local RWQCB.

Section 404 of the CWA regulates the discharge of dredged or fill material (e.g., fill, pier supports, and piles) into waters of the U.S., which includes Mare Island Strait. The program is jointly administered by the U.S. Army Corps of Engineers (Corps) and the U.S. EPA.

Section 10 of the Rivers and Harbors Act of 1899 (33 USC Section 401 et seq.) requires a permit from the Corps for creating obstructions (including excavation and fill activities) to the navigable waters of the U.S. Navigable waters are defined as those water bodies subject to the ebb and flow of the tide, and/or that are used, in their natural condition or by reasonable improvements, as a means to transport interstate or foreign commerce. Construction of structures in, under, or over navigable water; deposition or excavation of material in navigable waters; and all work affecting the location, condition, course, or capacity of navigable water are covered by Section 10 of the Rivers and Harbors Act.

The Corps San Francisco District guidance document for Information Requested for Verification of Corps Jurisdiction, revised November 2007, was used to determine the jurisdictional area for the study area. Based on this guidance, Section 10 jurisdiction for tidal areas is determined by the Mean High Water mark and the High Tide Line. Both the Mean High Water mark and High Tide Line are located along the quay wall. In April 2010, a wetland delineation was submitted to the Corps for verification (refer to Appendix A). In October 2010, the Corps verified its permitting jurisdiction over the waterside portion of the lease area (Valerius, 2010; Corps, 2010). There are approximately 210 square feet of Section 10 waters of the U.S. in the pile footprint of Alternative 1, and 295 square feet of such waters in the pile footprint of Alternative 2.

The CZMA, established in 1972 and administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources. For San Pablo Bay, Mare Island Strait, and the study area, the San Francisco Bay Conservation and Development Commission (BCDC) is the agency responsible for issuing consistency determinations under the CZMA. Refer to Section 3.1.7, Land Use, for more information regarding the CZMA.

EO 11988 requires that Federal agency construction, permitting, or funding of a project must avoid incompatible floodplain development, be consistent with the standards and criteria of the National Flood Insurance Program, and restore and preserve natural and beneficial floodplain values. The National Flood Insurance Act (42 USC Section 4001 et seq.) addresses both the need for flood insurance and the need to lessen the devastating consequences of flooding. The Floodplain Management and Protection Act (U.S. Department of Transportation Order 5650.2) and Flood Disaster Protection Act (42 USC Sections 4001 to 4128) require identifying flood-prone areas, providing insurance, and purchasing insurance for buildings in special flood hazard area (SFHAs).

The Federal Emergency Management Agency identifies SFHAs on flood insurance rate maps for all communities that participate in the National Flood Insurance Program. The flood insurance rate maps are based on historical data and hydrologic and hydraulic computations. The 100-year floodplain, or the areas inundated by a storm having a 1 percent annual chance of occurrence, is the regulatory standard used by Federal, State, and local agencies. Although the proposed project would not require insurance of buildings, the placement of fill in the SFHA could affect flood elevations and areas subject to flood hazards.

Existing Conditions

Mare Island Strait is a tidally influenced, navigable water of the U.S., located between Mare Island on the west and the city of Vallejo on the east. Mare Island Strait is also referred to as the mouth of the Napa River. The Napa River flows into Mare Island Strait, which then flows into San Pablo Bay and ultimately

into San Francisco Bay. Mare Island Strait is approximately 1,000 feet wide; in the study area, the bottom of the strait is between -15 and -40 feet MLLW (WETA, 2012).

In the 1800s, mining material traveled from the Sierra downstream and was deposited in San Pablo Bay. These sediments settled out of the water and tended to accrete along the western shoreline, including the western side of Mare Island. In 1907, the Navy constructed a dike at the southern end of Mare Island to reduce the amount of sediment in San Pablo Bay that could be flushed back into Mare Island Strait with the tide.

Groundwater in the study area is present in unconsolidated materials (i.e., fill and fluvial deposits) and bedrock. The depth to groundwater in the study area ranges from approximately 2 to 17 feet below ground surface, with an average water level of approximately 8 feet below ground surface (CH2M HILL, 2011). In the study area, groundwater flows generally east to northeast towards Mare Island Strait. The lease area is in an area of Mare Island Strait that is being evaluated and monitored by the Navy for contamination related to former shipyard facilities and activities. Investigations and remedial actions have been conducted in the study area since the early 1980s, and are ongoing. The study area is located in an area that is associated with former electroplating operations, former underground storage tanks, and industrial wastewater collection and treatment infrastructure that served the former Mare Island Naval Shipyard. Identified constituents of concern for the groundwater include tetrachloroethene, vinyl chloride, carbon tetrachloride, and hexavalent chromium. The extent and presence of groundwater beneath the strait is unknown; however, if groundwater is present, it would likely be in the underlying bedrock. Refer to Section 3.4.1, Hazardous and Regulated Materials, for more information regarding the potential for safety hazards related to these constituents.

Mare Island Strait is designated as a SFHA AE, a designation indicating areas that are subject to a 100-year flood with a baseline flood elevation of 9 feet (North American Vertical Datum 1988) on Flood Insurance Rate Map Number 6095C0610E, with an effective date of May 4, 2009. The SFHA is generally contained in the water channel, and only extends onto Mare Island and the city of Vallejo in localized areas. The lease area is also located in the coastal zone.

3.1.3 Air Quality (including Greenhouse Gas Analysis)

This section discusses conditions related to air quality and GHG emissions associated with implementation of the project alternatives.

Regulatory Setting

The CAA of 1970, 42 USC Section 7401 et seq., amended in 1977 and 1990, is the primary Federal statute governing air pollution. The CAA designates criteria pollutants, for which the National Ambient Air Quality Standards have been promulgated to protect public health and welfare. The six criteria pollutants are particulate matter (particulate matter less than or equal to 10 microns in diameter [PM_{10}] and particulate matter less than or equal to 2.5 microns in diameter [$PM_{2.5}$]), carbon monoxide (CO), sulfur dioxide, nitrogen dioxide, lead, and ozone.

In November 1993, the U.S. EPA promulgated two sets of regulations to implement Section 176(c) of the CAA. First, on November 24, U.S. EPA promulgated the Transportation Conformity Regulations, which apply to highways and mass transit. These regulations establish the criteria and procedures for determining whether transportation plans, programs, and projects funded under title 23 USC or the Federal Transit Act conform with the State Implementation Plan (58 Federal Register 62188). Then, on November 30, the U.S. EPA promulgated a second set of regulations, known as the General Conformity Regulations, which require that all other Federal actions conform to the State Implementation Plan (U.S. EPA, 1993). A federal action is exempt from the requirement to make a conformity determination

if the action fits one of the categories of actions identified in 40 CFR 93.153(c)(2) that have been deemed to result in no emissions increase or an increase in emissions that is clearly *de minimis*. Although the Proposed Action fits one or more of the exemptions in the regulation, the Navy nevertheless evaluated projected emissions against the General Conformity Rule (GCR) standards, so as to provide a basis for understanding the air impacts from the project.

Existing Conditions

The study area is located in the San Francisco Bay Area Air Basin, and is managed by the Bay Area Air Quality Management District. The San Francisco Bay Area Air Basin is classified as a nonattainment area for the 24-hour $PM_{2.5}$ and 8-hour ozone standards. Solano County is designated a maintenance area for CO. *De minimis* levels (in tons/year) for the air basin potentially affected by the Proposed Action are listed in Table 3-1.

Table 3-1
Applicable GCR *De Minimis* Emission Levels for Criteria Pollutants

Pollutant	Nonattainment (tons/year)
carbon monoxide	100 (maintenance area)[1]
NO_X	100 (marginal nonattainment, ozone precursor)[1]
PM_{10}	N/A
$PM_{2.5}$	100
sulfur dioxide	N/A
VOC	100 (marginal nonattainment, ozone precursor)[1]

Source: U.S. EPA, 2013b

Notes:

GCR = General Conformity Rule; N/A = Not Applicable; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns; VOC = volatile organic compounds

[1] *GCR determinations are based on Federal attainment designations. All air pollutants that are taken into consideration for maintenance of Federal standards do not have a de minimis threshold.*

On February 18, 2010, the CEQ released a memorandum, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions (CEQ, 2010), which provides guidance on how Federal agencies should consider climate change in their NEPA decision-making documents. The guidance advises that the consideration of climate change address GHG emission effects of a proposed action. The CEQ guidance states that "if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of carbon dioxide-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public" (CEQ, 2010, p. 1).

The guidance also advises that a Federal agency's consideration of climate change address the effects of climate change on a proposed project. The CEQ advises that the "focus of this analysis should be on the aspects of the environment that are affected by the proposed action and the significance of climate change for those aspects of the affected environment" (CEQ, 2010, p. 7). The primary predicted result of global climate change in the San Francisco Bay Area is an expected rise in the mean water level. Predictions by the BCDC based on data developed by the U.S. Geologic Survey show an increase in mean sea level of approximately 16 inches by mid-century and 55 inches by the end of the century (BCDC, 2011).

3.1.4 Noise and Vibration

This section discusses conditions related to noise and vibration levels associated with implementation of the project alternatives.

Regulatory Setting

The Noise Control Act (42 USC Chapter 4901, et seq.) directs the U.S. EPA to develop noise level guidelines that would protect the population from the adverse effects of environmental noise. The U.S. EPA published a guideline (U.S. EPA, 1974) recommending that the acceptable noise level limits affecting residential land use be 55 A-weighted decibels (dBA) day-night average noise level (L_{dn}) for outdoors, and 45 dBA L_{dn} for indoors. The U.S. EPA is careful to stress that these recommendations contain a factor of safety, and do not consider technical or economic feasibility issues, and therefore should not be construed as standards or regulations.

The Navy does not have specific standards for analyzing construction impacts associated with projects; however, the Federal Transit Administration (FTA) has published guidance for assessment of noise and vibration impacts for transit projects, including construction activity and operation of ferry boats and ferry terminals (FTA, 2006). This document is an accepted industry standard for analyzing construction-related impacts associated with transit projects during construction activities. The transit project impact criteria, described below, would apply to the project alternatives. FTA has developed three "sensitive" land use categories to evaluate compatibility of predicted noise levels:

- Category 1 includes land where quiet is an essential element, such as outdoor amphitheaters.
- Category 2 includes residences where people sleep.
- Category 3 includes institutional buildings where quiet is important, such as schools and libraries.

Categories 1 and 3 use the hourly equivalent sound level (L_{eq}), whereas Category 2 uses L_{dn}. Such criteria recognize the heightened community annoyance caused by late-night or early-morning operations, and respond to the varying sensitivities of communities to projects under different ambient noise conditions. For residential land uses, the daytime noise standard during construction is 90 dBA L_{eq} over a 1-hour period; and for an industrial area, the daytime noise standard during construction is 100 dBA L_{eq} over a 1-hour period. For potential vibration impacts, the FTA standard for annoyance vibration level (L_v) ranges from 75 to 83 vibration decibels (VdB) (depending on frequency of vibration event or duration) for "Category 3: institutional land uses with primarily daytime use" (FTA, 2006). The abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

Vallejo's Zoning Ordinance (Section 16.72.030) (City of Vallejo, 1999) includes noise performance standards to reduce conflicts between various land uses. Section 16.72.060 D of the Zoning Ordinance states that the noise performance standard for (nonrural) residential districts is 60 dBA. For office, neighborhood, pedestrian, waterfront shopping and services districts, and linear commercial and intensive-use districts, the standard is 75 dBA. Noise from transportation equipment used exclusively in the movement of goods and people to and from a given location, and noise from temporary construction or demolition work, are specifically exempted from the noise performance standards contained in the Zoning Ordinance (City of Vallejo, 1999).

Although the aforementioned City noise performance standards exempt construction noise, this study uses general assessment guidance from the FTA Transit Noise and Vibration Impact Assessment (FTA, 2006) to analyze potential construction activity noise impacts for sensitive receptors in the study area surroundings. The FTA guidelines provide a conservative method for analyzing potential impacts to sensitive receptors when no thresholds or guidance is available.

Existing Conditions

The areas surrounding the study area are dominated by industrial land uses and the waters of the Mare Island Strait. However, sensitive land uses in the study area, shown on Figure 3.1.4.1, include the Mare Island Outpatient Clinic (located approximately 850 feet west of the project site) and residences (located approximately 1,210 feet west of the lease area). Intervening structures, such as industrial buildings, are located between the lease area and the sensitive receptors.

3.1.5 Visual Resources

This section discusses the aesthetic environment associated with implementation of the project alternatives.

Regulatory Setting

The Navy does not have specific guidance for visual resources.

Existing Conditions

Scenic resources are features of the built or natural environment that contribute to a scenic public setting. Scenic resources in the study area include Mare Island Strait and associated watercraft, and historic structures on Mare Island. State Route 37, approximately 1.25 miles north from the lease area, is considered an Eligible State Scenic Highway, but it has not been officially designated as such (Caltrans, 2012).

The foreground views from the lease area are of the Mare Island Strait and associated seawall, and the historic maritime buildings of the former Mare Island Shipyard. The height of the historic maritime buildings blocks most of the middle-ground and background views to the west from the lease area. The foreground view also includes a former rail corridor along the waterfront that LMI intends to develop into a public promenade. The middle-ground views to the east are generally characterized by the waters of the Mare Island Strait, watercraft, and cranes, as shown on Figure 3.1.5.1. The background views are of the Vallejo Municipal Marina and rolling hills to the east of the lease area, which are covered mainly with one- and two-story single-family homes; the Mare Island Causeway; and the State Route 37 Napa River Bridge to the north of the lease area. The lease area is observed by drivers traveling local streets near the lease area and along the eastern side of Mare Island Strait, watercraft in the strait, and pedestrians and passengers traveling along Mare Island Way or at the Vallejo Ferry Terminal on the eastern side of the strait.

3.1.6 Transportation

This section describes the existing vehicular, pedestrian, marine, and public transit transportation features in the study area.

Existing Conditions

Direct access to the study area is provided by Waterfront Avenue, Nimitz Avenue, 7th Street, 5th Street, and Ferry Street. Regional access to the lease area is provided by State Route 37 from the north, and the Mare Island Causeway from the east. The Vallejo ferry service offers passenger transportation via high-speed vessels that travel between ferry terminals in San Francisco Bay, Vallejo, and San Francisco. The Vallejo Ferry Terminal is located at Mare Island Way and Georgia Street. Commercial vessels traveling through Mare Island Strait have barge access through the Mare Island Causeway Bridge (City of Vallejo, 2013a). Recreational boaters and paddle boats typically access the strait from the City's Municipal

Marina, which is at the northern end of the Downtown Marina Waterfront and has 670 slips (City of Vallejo, 2013b). The shoreline area adjacent to the proposed waterside facilities is designated as a future public promenade to provide shoreline access to pedestrians. Because many of the nearby properties are uninhabited, the roads near the lease area experience low traffic volumes (Winzler & Kelly, 2011). The closest airport is Napa County Airport, which is more than 10 miles to the north. There is no local public transit service on Mare Island.

3.1.7 Land Use

This section discusses conditions related to land use associated with implementation of the project alternatives in the study area.

Regulatory Setting

CZMA (USC Sections 3501 et seq., as amended in 1990 under the Coastal Zone Act Reauthorization Amendments), administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources and balances economic development with environmental conservation. The overall program objectives of CZMA remain balanced to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."

California has a federally approved Coastal Management Program, which includes the California Coastal Act and the McAteer-Petris Act. The program established the BCDC as the coastal management and regulatory agency responsible for governing coastal resources in San Francisco Bay. In accordance with its role in implementing CZMA, the BCDC is responsible for conducting Federal consistency reviews for projects along the San Francisco Bay segment of the California coastal zone. The coastal management plan, in conjunction with other BCDC laws and regulations, forms the BCDC's management program for complying with CZMA. The San Francisco Bay Plan (Bay Plan), adopted in 1969, is BCDC's policy document specifying goals, objectives, and policies for BCDC jurisdictional areas (BCDC, 2008).

Federal lands are outside the coastal zone, but Federal activities on land outside the coastal zone that affect resources of the coastal zone must be evaluated for their consistency, to the maximum extent practicable, with the Bay Plan and related policies. Because the landside portion is not on Federal lands, WETA is required to obtain BCDC approval for its waterside Proposed Action; the project as a whole has been subject to a full BCDC review process, and BCDC issued a Major Permit on June 12, 2014 (Appendix A).

The California State Lands Commission has jurisdiction and management control over certain public lands of the State that were received by the State from the United States. Known as sovereign lands, these lands include the beds of California's navigable rivers, lakes, and streams, and the State's tide and submerged lands along the coastline and offshore islands from the mean high tide line to 3 nautical miles offshore. The California State Lands Commission holds its sovereign lands for the benefit of all the people of the State, subject to the Public Trust for water-related commerce, navigation, fisheries, recreation, open space, and other recognized Public Trust uses (SLC, 2010). The submerged lands in the lease area are currently Federal property owned by the Navy in which the California State Lands Commission holds a reversionary interest. In accordance with the Defense Base Closure and Realignment Act of 1990, as amended, the submerged lands will revert to the State upon completion of the Navy's CERCLA actions and regulatory agency closure (Navy, 2012).

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Source: Imagery, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; Project components, Parcel boundary and Limits of work, GHD, 2012.

Sensitive receptors

Project components

Limit of landside work/ construction staging

Navy lease boundary over submerged land

0 250 500 FEET

NOISE-SENSITIVE RECEPTORS

March 2015

Vallejo Ferry Maintenance Facility EA
Vallejo, California

FIGURE 3.1.4.1

2/17/15 vsa/hk...T:\WETA Vallejo\Fig6_view_promenade_mar15.ai

VIEW OF MARE ISLAND STRAIT SHORELINE

Vallejo Ferry Maintenance Facility EA
March 2015 Vallejo, California

FIGURE 6

Existing Conditions

The lease area is located on the Navy's submerged lands in Mare Island Strait, adjacent to Waterfront Avenue on Mare Island in the city of Vallejo. The lease area extends approximately 50 feet away from the quay wall (excluding the gangway). The lease area is unoccupied, with no existing in-water infrastructure. The surrounding landside area includes light industrial, warehouse, and office land uses. To the immediate northwest is a vacant building, to the southwest is a utility building that houses a pump station and electrical substation, to the southeast is a warehouse, and to the northeast is the waterfront. The general plan designation for the landside area is Employment. The landside area is zoned Mixed-Use Planned Development, and the general plan considers the Mixed-Use Planned Development district as a conditionally compatible zoning classification for the Employment designation. The *Mare Island Specific Plan* guides reuse at the former shipyard, including government oversight and approved land uses. The Specific Plan land use designation for the landside area is Reuse Area 3B (Waterfront Mixed Use), which allows office/research and development, warehousing, live/work, educational/civic, and employment-supporting uses (City of Vallejo, 2011).

3.2 BIOLOGICAL RESOURCES

This section identifies conditions related to biological resources associated with implementation of the project alternatives.

Regulatory Setting

The ESA of 1973, as amended, requires that Federal agency actions would not jeopardize the continued existence of an endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat of such species. The ESA is administered by the USFWS and the NMFS. In general, the NMFS is responsible for protection of ESA-listed marine species and anadromous fishes, while other species are under USFWS jurisdiction. Section 7 of the ESA requires formal consultation with the USFWS or NMFS for projects that may affect those species that are either listed as, or proposed for listing as endangered or threatened, to ensure that the Proposed Action will not jeopardize listed species or destroy or adversely modify designated critical habitat for such species. The Corps has completed consultation with the NMFS under the ESA for federally listed species that may be affected by construction and operation of the facility, as described in Alternative 2 (NMFS, 2012).

The original Fish and Wildlife Coordination Act of March 10, 1934, authorized the Secretaries of Agriculture and Commerce to assist and cooperate with Federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. The amendments to this act, enacted in 1946, require consultation with the USFWS, NMFS, and state agencies responsible for fish and wildlife resources for all proposed Federal undertakings and non-Federal actions needing a Federal permit or license that would impound, divert, deepen, or otherwise control or modify a stream or water body; and the amendments also require such undertakings and actions to make mitigation and enhancement recommendations to the involved Federal agency.

The Migratory Bird Treaty Act (16 USC 703-712), as amended, makes it a prohibited act, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention…for the protection of migratory birds…or any part, nest, or egg of any such bird" (16 USC 703). EO 13186, Responsibilities of Federal Agencies to Protect

Migratory Birds, requires that all Federal agencies avoid or minimize the effects of their actions on migratory birds and take active steps to protect birds and their habitat.

The Fishery Conservation and Management Act of 1976 (16 USC Section 1802), later changed to the Magnuson Fishery Conservation and Management Act in 1980, established a 200-nautical-mile fishery conservation zone in U.S. waters, and a regional network of Fishery Management Councils. In 1996, the Magnuson Fishery Conservation and Management Act was reauthorized and amended as the Magnuson-Stevens Fishery Conservation and Management Act (MSA), known as the Sustainable Fisheries Act. The MSA requires that Essential Fish Habitat (EFH) be identified and described for each federally managed species. EFH designates areas that are essential to the maintenance of commercially important fish populations, including habitat areas of particular concern. The MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH, or when NMFS independently learns of a Federal activity that may adversely affect EFH. The Corps has completed consultation with NMFS on the potential effects on EFH that may result from construction and operation of the facility, as described in Alternative 2 (NMFS, 2012).

Affected Environment

The study area for biological resources includes developed shoreline and open-water areas in the Mare Island Strait, which connects the Napa River and Napa River Estuary to San Francisco Bay. Mare Island Strait is considered estuarine habitat, because it is tidally influenced. The adjacent landside area consists entirely of developed and paved land. The salinity in the strait fluctuates with the season, tidal cycle, and freshwater outflow from both the Napa River and the Sacramento River–San Joaquin River Delta. The shoreline of the strait in the lease area has been entirely modified by the construction of piers, wharves, bulkheads, and by the placement of landfill. Vegetation is not expected to be found in the channel. The bottom substrate in the Mare Island Strait is primarily composed of fine-grain silt and clay, creating soft-bottom habitat that can support high densities of benthic invertebrates, which are forage for larger species such as fish. Common benthic species include ribbed mussels (*Ischadium demissum*), Baltic clams (*Macoma balthica*), California hornsnails (*Cerithidea californica*), amphipods, polychaete worms, and bay mussels (*Mytilus* spp.). Fish species typically found in the study area include staghorn sculpin, starry flounder, topsmelt, arrow goby (*Clevelandia ios*), yellowfin goby (*Acanthogobius flavimanus*), stickleback (*Gasterosteus* sp.), mosquitofish (*Gambusia affinis*), green sunfish (*Lepomis cyanellus*), and Pacific herring.

The California Natural Diversity Database was queried for records of special-status species for the five U.S. Geological Survey 7.5-minute topographic quadrangles that were considered most relevant to the project: Benicia, Cuttings Wharf, Mare Island, Napa, and Vine Hill. The selected quadrangles include the Napa River (except some of the headwaters), Mare Island and Mare Island Strait, Carquinez Strait east to the east end of Ryer Island, and the eastern portion of San Pablo Bay. Information was also obtained from USFWS and NMFS websites, scientific literature, and biologists familiar with the study area. An official compilation of federally listed endangered and threatened species potentially occurring in the study area was obtained from the USFWS Sacramento Office website. These species lists are included in Appendix A. Migratory birds are not located in the lease area, but may be present at adjacent landside areas.

The lease area is entirely subtidal estuarine habitat. Although special-status species may occur elsewhere on Mare Island in terrestrial, saltmarsh, or other wetlands, there is no habitat at the lease area suitable for most saltmarsh-dependent or freshwater species (Winzler & Kelly, 2011). The California Natural Diversity Database and USFWS lists were screened to identify sensitive species, species of concern, and designated critical habitat that have potential to occur in the study area. Table 3-2 presents the special-status species with potential to occur in the project vicinity.

Table 3-2
Special-Status Species with Potential to Occur in the Waterside Project Vicinity

Common Name	Scientific Name	Status[1]	Critical Habitat in Project Site[2]	Habitat in Project Vicinity
Green Sturgeon, Southern DPS	*Acipenser tedirostrus*	FT	Yes	May be present year-round in Mare Island Strait
Delta smelt	*Hypomesus transpacificus*	FT	No	May be present in Mare Island Strait during periods of high discharge from the Delta
Chinook salmon, Sacramento River winter-run ESU	*Oncorhynchus tshawytscha*	FE	Yes	May be present in Mare Island Strait during periods of migration
Chinook salmon, Central Valley spring-run ESU	*Oncorhynchus tshawytscha*	FT	No	May be present in Mare Island Strait during periods of migration
Steelhead, Central California Coast DPS	*Oncorhynchus mykiss*	FT	Yes	May be present in Mare Island Strait during periods of migration
Steelhead, Central Valley DPS	*Oncorhynchus mykiss*	FT	No	May be present in Mare Island Strait during periods of migration

Notes:

DPS = Distinct Population Segment
ESU = Evolutionarily Significant Unit

[1] *FE = Federal Endangered; FT = Federal Threatened*

[2] *"NA" indicates that the species does not have critical habitat designated. "No" indicates that critical habitat is designated, but does not overlap with the project vicinity.*

With the exception of green sturgeon (*Acipenser medirostris*), federally listed fish species with potential to occur in the study area would only be seasonally present in the lease area, as described in Table 3-2. These fish species may be present during the fall, winter, or spring, but are unlikely to be present during the summer months. These species may use Mare Island Strait as a migratory corridor or for foraging on plankton or benthic invertebrates. Green sturgeon may use Mare Island Strait year-round for foraging and as a migratory pathway. Mare Island Strait is designated as critical habitat for green sturgeon, Sacramento River winter-run Chinook salmon, and Central California Coast Distinct Population Segment (DPS) steelhead. Descriptions of these species are provided below.

North American Green Sturgeon Southern DPS. Green sturgeon southern DPS is a federally threatened species. Green sturgeon are not abundant along the Pacific Coast but are known to exist in the San Francisco Bay-Delta Estuary (Pycha, 1956; Skinner, 1962; Moyle, 1976). Green sturgeon are anadromous fish that spend most of their lives in saltwater and return to spawn in freshwater. Green sturgeon rely on streams, rivers, estuarine habitat, and marine waters during their lifecycle. Adult southern DPS green sturgeon spawn in the reaches of the Sacramento River watershed with swift currents and large cobble. Pre-spawn green sturgeon enter San Francisco Bay between late February and early May as they migrate to spawning grounds in the Sacramento River (Heublein et al., 2009). Post-spawning adults may be present in San Francisco Bay after spawning in the Sacramento River in the spring and early summer for months prior to migrating to the ocean. Juvenile green sturgeon move into the Delta and San Francisco estuary early in their juvenile life history, where they may remain for 2 to

3 years before migrating to the ocean (Allen and Cech, Jr., 2007; Kelly et al., 2007). Sub-adult and nonspawning adult green sturgeon use both ocean and estuarine environments for rearing and foraging.

Features of designated critical habitat for green sturgeon southern DPS in the study area that are essential for their conservation are food resources, water flow, water quality migratory corridor, water depth, and sediment quality; these features in the lease area are partially degraded.

Delta Smelt. The delta smelt (*Hypomesus transpacificus*) is a federally listed threatened species. It is endemic to Suisun Bay upstream of San Francisco Bay through the delta estuary in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties. It is a euryhaline (capable of tolerating a wide range of water salinity) species; but, for a large part of its life span, it is associated with the freshwater edge of the mixing zone (saltwater-freshwater interface). In the San Francisco Bay Area, the mixing zone has been estimated, during a normal water runoff year, to be in the Carquinez Strait during April and to move upstream to approximately Chipps Island in eastern Suisun Bay in August. Breeding habitat for the delta smelt is designated as federally listed threatened critical habitat.

Sacramento Winter-Run and Central Valley Spring-Run Chinook Salmon Evolutionarily Significant Units. The species historically ranged from the Ventura River in California to Point Hope, Alaska, on the eastern edge of the Pacific, and in the western portion of the Pacific Ocean, from Hokkaido, Japan, to the Anadyr River in Russia (Healey, 1991). Two Chinook salmon Evolutionarily Significant Units (ESUs) may occur in the study area: Sacramento River winter-run and Central Valley spring-run. Factors used in determining ESUs include spatial, temporal, and genetic isolation; maturation rates; and other life history traits. Chinook salmon have been categorized into 17 ESUs. Each ESU is considered a distinct race and has been given its own management status.

Both winter-run and spring-run Chinook salmon tend to enter freshwater as immature fish, migrate far upriver, and delay spawning for weeks or months.

The winter-run Chinook salmon, a federally listed endangered species, spawns in the upper Sacramento River below Keswick Dam. The Central Valley spring-run Chinook salmon, a federally listed threatened species, spawns in the Sacramento River Basin. Both runs are most commonly found migrating through the northern and central portions of San Francisco Bay (CDFG, 1987).

Features of designated critical habitat for winter-run Chinook salmon in the study area that are essential for their conservation are habitat areas and adequate prey that are uncontaminated; these features in the study area are partially degraded and limited.

Central California Coast Steelhead DPS and Central Valley Steelhead DPS. Central California Coast steelhead was federally listed as threatened on August 18, 1997. The Central Valley steelhead DPS was listed as threatened on March 19, 1998.

Steelhead historically ranged throughout the northern Pacific Ocean, from Baja California to the Kamchatka Peninsula. Currently, their range extends from San Diego County in southern California to the Kamchatka Peninsula (NOAA, 2006). San Francisco Bay and its tributary streams support migrating steelhead populations. *Oncorhynchus mykiss* can be either anadromous or can complete their entire lifecycle in freshwater. Those fish that remain in freshwater are referred to as rainbow trout. Steelhead, the anadromous form of *O. mykiss*, can spend several years in freshwater prior to smoltification, and can spawn more than once before dying, unlike most other salmonids (NOAA, 2006). Adult steelhead typically migrate from the ocean to freshwater between December and April, peaking in January and February (Fukushima and Lesh, 1998). Juvenile steelhead migrate as smolts to the ocean from January through May, with peak migration occurring in April and May (Fukushima and Lesh, 1998).

Features of designated critical habitat for Central California Coast steelhead in the study area that are essential for their conservation are the estuarine water column, foraging habitat, and food resources used during migration; these features in the study area are partially degraded and limited.

Essential Fish Habitat

The San Francisco Bay Estuary, including Mare Island Strait in the lease area, is classified as EFH under the MSA. San Pablo Bay—from the San Rafael Bridge to the Carquinez Bridge—serves as habitat for commercially important fish and sharks that are federally managed under three fisheries management plans (FMPs): the Coastal Pelagic FMP, the Pacific Groundfish FMP, and the Pacific Coast Salmon FMP (NMFS, 2013). Table 3-3 lists some species managed under these plans that may occur in the study area. In addition to EFH designations, the greater San Francisco Bay is designated as a Habitat Area of Particular Concern for various fish species in the Pacific Groundfish and Coastal Pelagic FMPs, because this estuarine system serves as breeding and rearing grounds that are important to these fish stocks.

Table 3-3
Federally Managed Fish Species of San Pablo Bay

Fisheries Management Plan	Species, Common Name	Species, Scientific Name	Life Stage
Coastal Pelagic	Northern anchovy	*Engraulis mordax*	J, A
	Pacific sardine	*Sardinops sagax*	J, A
Pacific Groundfish	English sole	*Parophrys vetulus*	J, A
	Sand sole	*Psettichthys melanostictus*	L, J, A
	Starry flounder	*Platichthys stellatus*	J, A
	Lingcod	*Ophiodon elongates*	J, A
	Brown rockfish	*Sebastes auriculatus*	J
	Pacific whiting (hake)	*Merluccius productus*	E,L
	Leopard shark	*Triakis semifasciata*	J, A
	Spiny dogfish	*Squalus acanthias*	J, A
	Skates	*Raja* spp.	J, A
	Cabezon	*Scorpaenichthys marmoratus*	J
Pacific Coast Salmon	Chinook salmon	*Oncorhynchus tshawytscha*	J, A

Source: NMFS, 2013

Notes:

A = Adult; J = Juvenile; L = Larvae; E = Egg

3.3 CULTURAL RESOURCES

This section identifies conditions related to cultural resources associated with both historic resources as well as archaeological resources.

Regulatory Setting

The NHPA declares Federal policy to protect historic sites and values in cooperation with other nations, states, and local governments. Section 106 of the NHPA and implementing regulations (36 CFR 800) outline the procedures to be followed in the documentation, evaluation, and mitigation of impacts for cultural resources. The Section 106 process applies to any Federal undertaking that has the potential to affect cultural resources. Under Section 106 of the NHPA, only those cultural resources listed or determined eligible to be listed on the National Register of Historic Places (NRHP) are considered historic properties. The Navy's responsibilities for compliance with Section 106 and other laws governing Federal responsibilities for the appropriate consideration of cultural resources and issues of concern to the Native American community are detailed in OPNAVINST 5090.1D and OPNAV M-5090.1, Chapter 13 (Cultural Resources Compliance and Management).

The Mare Island Historic District (Historic District) was nominated to the NRHP in 1996 (JRP, 1996), and was listed on the NRHP in January of the following year. The Historic District encompasses an area of nearly 980 acres, which equates to roughly 65 percent of the former Mare Island Naval Shipyard. The Historic District includes a "rich collection of buildings, structures, and sites that represent nearly a century of naval activities at this, the oldest shipyard and naval facility on the West Coast of the United States" (JRP, 1996).

In 1997, the Navy executed a Section 106 Memorandum of Agreement (MOA), titled *Memorandum of Agreement among the United States Navy, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Layaway, Caretaker Maintenance, Leasing, and Disposal of Historic Properties on the Former Mare Island Naval Shipyard, Vallejo, California.* This Section 106 MOA was completed in connection with the Navy's 1998 joint EIS/EIR for the disposal of Mare Island property, which evaluated, among other things, the effects of the redevelopment of waterfront property along the Mare Island Strait. The MOA was intended to resolve the adverse effects arising from the transfer of historic properties in the Historic District to the City. Stipulation 7.C of the Section 106 MOA notes that "When title to property located within the Mare Island Naval Shipyard Historic District is transferred from the Navy to a non-Federal entity, all undertakings affecting these properties will be administered exclusively in accordance with City codes and ordinances." In 2000, a First Amendment to the MOA was executed. Under the First Amendment, the City became a signatory to the MOA and assumed additional responsibilities for cultural resources compliance at Mare Island, including responsibilities at Navy-owned property prior to its transfer to a non-Federal entity.

Existing Conditions

Cultural resources consist of archaeological resources (i.e., prehistoric and historic archaeological sites), traditional cultural properties, and architectural resources (i.e., historic districts, buildings, facilities, and other structures). For issuance of a submerged land lease under both of the action alternatives, the cultural resources study area analyzed in this document includes the submerged land lease boundaries as well as the immediately adjacent shoreline. Existing cultural resource conditions in the study area are based on a review of information found in the following resources:

- *Catalogue of Historic Resources* (Chattel Architecture, 2005, revised 2007)
- *Archaeological Treatment Plan for Mare Island, Vallejo, Solano County, California* (PAR Environmental Services, 2000a
- *Revised Predictive Archaeological Model for Mare Island, Vallejo, Solano County, California* (PAR Environmental Services, 2000b)
- *Initial Study/Subsequent Mitigated Negative Declaration, Vallejo-Baylink Ferry Maintenance Facility—May 2011,* prepared for the City of Vallejo, California (Winzler & Kelly, 2011)
- Sacred Lands File maintained by the California Native American Heritage Commission (Appendix B)

- Shipwreck database maintained by the California State Lands Commission
- NRHP Registration Form for Mare Island Historic District (JRP, 1996)
- *Memorandum of Agreement among the United States Navy, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Layaway, Caretaker Maintenance, Leasing, and Disposal of Historic Properties on the Former Mare Island Naval Shipyard, Vallejo, California*, as amended (Navy, 1997, amended 2000)
- NRHP (NPS, 2013)

Cultural Setting

Mare Island is situated in the ethnographic territory of the Patwin, who inhabited the western half of the lower Sacramento Valley and adjoining portions of the Coast Range, including the northern shores of Suisun Bay and the shores of San Pablo Bay eastward from the Napa River. The Spanish annexation and colonization of Alta California produced profound changes in the culture of the Patwin. Missions were established in Northern California at San Jose in 1797, San Francisco (San Francisco de Asís) in 1777, San Rafael in 1817, and Sonoma (San Francisco Solano) in 1823. The missions resettled and concentrated the aboriginal hunter-gatherer population into agricultural communities. Patwin neophytes have been identified in the baptismal records of the missions at San Francisco, San Jose, and Sonoma (Johnson, 1978).

With Spanish colonization of the region, Mare Island itself was referred to as *Isla de la Yegua*, which translates literally to "isle of the mare" (Gudde, 1969). The first development on Mare Island, however, does not appear to have occurred until after California became part of the U.S. in 1848, when the territory was formally ceded in the treaty of Guadalupe Hidalgo following the U.S. victory over Mexico in the Mexican War of 1846–1847 (Beck and Haase, 1974). The Mare Island Navy Yard was established by an act of Congress on August 31, 1852, and the site functioned in this capacity for the U.S. Navy until closure of its primary facilities in 1996 (Hoover et al., 1990; Winzler & Kelly, 2011).

Known Cultural Resources

The Historic District is listed on the NRHP—and thus is also listed on the California Register of Historical Resources. Although the Historic District is focused primarily on developed landside areas, it also includes an arbitrary archaeological buffer that extends 100 feet into the waters of Mare Island Strait. The intent of this buffer is to encompass any submerged archaeological resources that could potentially contribute to the historical significance of the Historic District (JRP, 1996) (Figure 3.3.1).

Although a portion of the proposed lease area falls within the Historic District's 100-foot-wide archaeological buffer, there are no known cultural resources—including known or suspected shipwrecks—in the proposed submerged land lease area. The potential for underwater archaeological resources (i.e., shipwrecks or inundated archaeological deposits in the submerged portion of the study area) is considered extremely low, given that these waters have been routinely dredged for more than a century.

Portions of the Mare Island Naval Shipyard, including the shoreline immediately adjacent to the proposed Navy lease area, were transferred from the Navy to the City on March 26, 2002. Included in this property transferred to the City was the quay wall, a contributing element to the Historic District. The quay wall runs along the shoreline and abuts the Navy's proposed submerged lease area. No other known cultural resources have been recorded in the study area.

In addition, coordination with the Native American Heritage Commission confirmed that there are no sacred lands present in the immediate project vicinity. The sacred lands search request and results are included as Appendix B of this Final EA.

3.4 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential hazards and hazardous materials in the study area. Refer to Section 3.1.2, Water Resources, for more information on potential contamination of groundwater and surface water.

Regulatory Setting

CERCLA was developed to protect the water, air, and land resources from the risk created by past chemical disposal practices. This act is also referred to as the Superfund Act, and the sites listed under it are referred to as Superfund sites. CERCLA requires Federal agencies to conduct response actions needed to clean up contamination from past releases of hazardous substances causing an unacceptable risk to human health and the environment. In 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA), which mandated that the Navy follow the same clean-up regulations that apply to private entities.

The Federal RCRA regulates the treatment, storage, transportation, handling, labeling, and disposal of hazardous waste. Under the RCRA, 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, and is approved by the U.S. EPA. The U.S. EPA approved California's RCRA program, referred to as the Hazardous Waste Control Law, in 1992.

Military bases manage inactive hazardous waste sites and hazardous material spills in compliance with CERCLA, through the Installation Restoration Program (IRP). Cleanup of past contamination from underground storage tanks and corrective actions for past contamination of RCRA sites could also be part of the IRP. The Navy initiated an IRP at Mare Island, which includes the study area, in 1981 to evaluate public health and environmental risks associated with the shipyard's historical operations and waste disposal activities.

The California Department of Toxic Substances Control (DTSC) is responsible for regulating the use, storage, transport, and disposal of hazardous substances in the state. DTSC maintains a Hazardous Waste and Substances Site List for site cleanup, called the Cortese List. Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal-EPA) to update the Cortese List at least annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. The study area is listed on the Cortese List.

Existing Conditions

Although the lease area is not in a designated National Priorities List Superfund site (U.S. EPA, 2013), the Navy continues CERCLA investigation in the lease area and adjacent submerged lands. The lease area is in the Navy's CERCLA Investigation Area (IA) K – Cells 28 and 29 in the Mare Island Strait. The *Draft Remedial Investigation Report for IA K* (Draft RI) indicates that sediment samples taken in the vicinity of the lease area in 2002 and 2009 detected metals, organotins, polychlorinated biphenyls (PCBs), pesticides, and semi-volatile compounds (SVOCs). The Draft RI concluded that no adverse effects to human health are associated with chemicals in the sediment, and that the chemical concentrations in the offshore sediment generally pose only low-level risk to the environment (Navy, 2013). Regulatory review of the Draft RI identified data gaps and the Navy conducted additional sediment samples in 2012. Metals, organotins, PCBs, pesticides, SVOCs, polycyclic aromatic hydrocarbons, and total petroleum hydrocarbons as diesel and motor oil were detected in the 2012 sediment samples (Navy, 2013).

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Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; Project components, Parcel boundary and Limits of work, GHD, 2012.

100-foot Archaeological Buffer
(included within the Historic District Boundary)

Navy lease boundary
over submerged land

Project Features

0 100 200 FEET

MARE ISLAND HISTORIC DISTRICT

Vallejo Ferry Maintenance Facility EA
March 2015 Vallejo, California

FIGURE 3.3.1

Because it consists of submerged sediments, there were no underground storage tanks, aboveground storage tanks, structures containing asbestos-containing material or lead-based paint, or PCB-containing equipment or machinery in the lease area (Navy, 2013).

Sediment in the lease area was also evaluated for radiological concerns. Regulatory approval of the *Final Radiological Site Inspection Report* and of a "Finding of No Further Action for Harbor Environmental Monitoring" concluded that all radiological concerns in the lease area have been addressed (DTSC and U.S. EPA, 1996; Navy, 2013).

The lease area has not been investigated under the Navy's Military Munitions Response Program for Material Potentially Presenting an Explosive Hazard (MPPEH) because it is not deemed an area impacted by MPPEH. The Navy has not recovered MPPEH items in the vicinity of the lease area, and there were no piers in the vicinity of the lease area where MPPEH may have been inadvertently released into Mare Island Strait. Navy research concluded that dredging near the quay wall was not conducted below 26 feet plus 2 feet MLLW directly in front of the quay wall. Dredging was permitted to increase in depth moving away from the quay wall toward the center of Mare Island Strait at a ratio of 1 vertical foot to 3 horizontal feet until maximum dredging is reached in each area. Frequent dredging over the history of Mare Island Naval Shipyard operations was required to maintain an operational depth for the berthing and maintenance of ships. If MPPEH was present for some reason, the frequent dredging would have most likely removed any MPPEH that may have been at the project area. The Navy lease will contain a notice that MPPEH may be present in the sediment below 28 feet MLLW (Navy, 2013).

In September 2013, the Navy executed a FOSL, which summarizes existing environmental conditions and applicable requirements and notifications for hazardous substances, petroleum products, and other regulated material in the project area. The Final FOSL stated that there are no contaminant issues related to CERCLA hazardous substances, radiological materials, or petroleum products. The Final FOSL also stated that the Navy's RCRA requirements at the lease area will be satisfied by fulfilling CERCLA requirements through the Navy's IRP. No hazardous substances were known to have been stored or intentionally disposed in the study area. The Final FOSL identifies certain requirements relating to the potential presence of MPPEH items, as identified in the preceding paragraph. In particular, the lease will require the lessee to submit a work plan to the Navy, the DTSC, and the RWQCB for review and comment prior to engaging in any sediment disturbance activities, and will require that the lessee stop all work and notify the Navy immediately if previously unknown contamination, such as, but without limitation, buried debris, stained sediment, unusual odors, or MPPEH is discovered during sediment-disturbing activity (Navy, 2013).

3.5 SOCIOECONOMICS

This section provides a general discussion of the socioeconomic conditions (i.e., population, demographics, income) in the area comprising the study area.

Regulatory Setting

Consistent with EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) the Navy's policy is to identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority and low-income populations.

Existing Conditions

Mare Island is located in the city of Vallejo, which had a total estimated population of 115,942 in 2010 (U.S. Census Bureau, 2010a). However, the unofficial population estimate for Mare Island is

approximately 600 people (ZipAreaCode, 2013). There are no residences on or directly adjacent to the lease area; however, there are residences located west of the lease area along Walnut Avenue. The U.S. Census Bureau compiles data for census tracts, which are designed to be homogeneous with respect to demographic characteristics such as economic status and living conditions. The census tract is the most specific unit of census data for the study area; the study area is located in Census Tract 2508.01.

Table 3-4 presents statistics on low-income and minority population characteristics for California, Solano County, and the city of Vallejo. As shown in Table 3-4, the percentage of the population that self-reports as minority in the census tract that includes the study area is higher than the comparative geographies. The city of Vallejo has 62 percent minority population; Census Tract 2508.01 has a slightly greater minority population, at 67 percent. These values are substantially greater than the minority population of Solano County (49 percent) and California (42 percent). As shown in Table 3-4, the population living in Vallejo has a poverty rate of approximately 15 percent, which is generally commensurate with that of the State and county.

Table 3-4
Minority and Economic Data (2010)

Area	Total Population	Percent Minority	Percent Below Poverty Level
California	37,253,953	42	14
Solano County	413,344	49	11
City of Vallejo	115,942	62	15
Census Tract 2508.01	3,917	67	NA

Source: U.S. Census Bureau, 2010a

Note:

NA – Not available.

As shown in Table 3-5, the city of Vallejo and Solano County have a higher median income compared to the rest of California. However, Census Tract 2508.01 has a substantially lower median household income (i.e., approximately $20,000 lower) compared to the State, county, and city.

Table 3-5
Median Income and Persons Per Household

Population Area	Persons Per Household (2007-2011)	Median Household Income (2007-2011)
California	2.91	$61,632
Solano County	2.82	$69,914
City of Vallejo	2.83	$62,325
Census Tract 2508.01	NA	$42,857

Source: U.S. Census Bureau, 2010a; U.S. Census Bureau, 2010b

3.6 UTILITIES

Utility systems on the former Mare Island Shipyard have been or are in the process of being conveyed to public and private entities, or abandoned in place. According to the *Mare Island Specific Plan* (2008) Section 6.2.1, Water Distribution System, the Water Division of the City's Department of Public Works provides water service to Mare Island through two transmission mains crossing Mare Island Strait (City of Vallejo, 2008). There are no known existing utilities below or at the channel mudline at the waterside project location (Lewis, 2013). Landside utility service is provided by Vallejo Sanitation and Flood Control District, which handles wastewater, and by Island Energy, which handles gas and electric services.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter evaluates the potential direct, indirect, short-term, and long-term impacts on the human and natural environments resulting from the Navy's Proposed Action.

The environmental consequences discussion provides an analysis of the potential adverse and beneficial environmental impacts that could result from implementing the alternatives. Direct and indirect impacts are analyzed for each resource. Direct impacts are caused by the Proposed Action, and occur at the same time and place as the Proposed Action. Indirect impacts are caused by the action, and occur later in time or are farther removed in distance, but are still reasonably foreseeable. Cumulative impacts result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or entity undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time. Cumulative impacts are presented in Chapter 5.

NEPA does not prescribe specific significance criteria, but rather states that the environmental impacts should be evaluated in terms of their context, intensity, and duration. Context refers to the geographic area (spatial extent) of impact, which varies with the physical setting of the activity and the nature of the resource being analyzed. Intensity refers to the severity of the impact; evaluation of the intensity of an impact considers the sensitivity of the resource and other factors of context to determine the degree or magnitude of the impact relative to the affected environment. The intensity of the impact is described in terms of whether there would be no effect, or if the effect would be minor, moderate, or major. No impact means the effect would not be detectable, and would have no discernible effect. Minor impacts would be slightly detectable, but would not be expected to have an overall effect. Moderate impacts would be clearly detectable and could have an appreciable effect. Major impacts would have a substantial, highly noticeable effect. Duration refers to how long the impact may last, and may be either short term or long term. Where applicable, mitigation measures from the CEQA IS/MND and the associated coordination processes with resource agencies for impacts that would occur in the waterside portion of the proposed maintenance facility (i.e., the project area) are documented in the impact discussion. Minimization measures from the CEQA IS/MND that apply to the impacts that would occur in the landside portion of the proposed maintenance facility are provided in Appendix C of this Final EA.

4.1 PHYSICAL ENVIRONMENT

This section provides an impact discussion of physical characteristics related to the site. The following sections describe how the project alternatives could affect geology, water resources, air quality and GHGs, noise and vibration, visual resources, transportation, and land use.

4.1.1 Geology

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to soils or seismic hazards. However, the subsequent construction and operation of waterside components of the ferry maintenance facility by WETA would have potential indirect effects.

Minor soil displacement in the form of movement of bay muds could occur during construction, particularly during the alteration and placement of pilings. The new piles are expected to impact a total area of approximately 210 square feet, and would displace approximately 146 cubic yards of water and 256 cubic yards of soil and bedrock. The soil displacement could result in increased turbidity, but would be localized and short term. WETA has designed the in-water facilities to reduce soil displacement

effects, and would thereby minimize impacts to soils. Therefore, there would be minor, short-term indirect adverse impacts to soils.

The project would not place structures on a site with known surface-fault ruptures. Structures would be built in compliance with California Building Codes. Additionally, WETA would incorporate site-specific design recommendations to reduce seismic hazards, as detailed in the *Supplemental Geotechnical Report* (Kleinfelder, 2011) prepared for the study area. WETA would also incorporate mitigation identified in the CEQA IS/MND, approved in 2011 (described below).

Therefore, Alternative 1 would have no significant impact to geology.

Alternative 2

Similar to Alternative 1, the lease action under Alternative 2 would not result in direct impacts to soil disturbance or seismic hazards. Alternative 2 is located at the same site as Alternative 1; therefore, the same conditions, recommendations, specifications, and mitigation measures described above would apply if this alternative were implemented. Alternative 2 would accommodate two additional berthing areas, which would result in a larger project and would therefore result in a minor increase in the amount of waterside soil disturbance during construction. Alternative 2 would also result in minor, short-term, indirect adverse impacts to soils, and no impact to seismic hazards.

Therefore, Alternative 2 would have no significant impact to geology

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop new waterside maintenance facilities. Therefore, no impacts related to soil disturbance or seismic hazards would occur.

Minimization Measures

To reduce potential environmental effects, the following mitigation measure will be implemented by WETA.

GEO-1: Design Level Geotechnical Investigation

Design and construction will address the recommendations made in site-specific design-level geotechnical reports prepared for the project. The geotechnical recommendations will be incorporated into the final plans and specifications for the project, and will be implemented during construction.

4.1.2 Water Resources

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would have no direct impact on water resources. However, the subsequent construction and operation of waterside components of the ferry maintenance facility by WETA would have potential indirect effects from the placement of fill in Mare Island Strait, and on water quality from construction and operation of WETA's facilities.

Impacts from Placement of Fill

Waterside construction would include placement of new piles in Mare Island Strait. According to the Bay Plan, the surface area of the San Francisco Bay and the total volume of water should be kept as large as possible in order to maximize active oxygen interchange, vigorous circulation, and effective tidal action.

Water circulation in the San Francisco Bay should be maintained, and improved as much as possible. Any proposed piles should be thoroughly evaluated to determine their effects upon water circulation. Placement of piles reduces the surface area and the volume of water in the strait, which could reduce the ability to maintain adequate oxygen levels in the water, circulation, and tidal interchange. In addition, the proposed waterside improvements would cover approximately ~~13,700~~ ***14,687*** square feet of water surface, which would include approximately ~~7,800~~ ***8,787*** square feet of newly constructed facilities, and approximately 5,900 square feet of relocated floats. The berths would include concrete floating docks with steel-pipe guide piles, and fendering sized to accommodate the ferry vessels. The water surface area that would be occupied by the proposed project includes gaps between the structures, such as narrow fingers for the berths, which have large, open areas between them. Construction of the new waterside improvements would require installation of up to 40 piles ranging in diameter from 12 to 42 inches. The piles are expected to affect a total area of approximately 210 square feet, and would displace approximately 146 cubic yards of water and 256 cubic yards of soil and bedrock. Because Alternative 1 would result in the addition of a very small amount of fill, in the form of piles, relative to the total water volume of the San Francisco Bay, this alternative would have a minor impact to oxygen levels in the water, circulation, and tidal interchange. In addition, there are no additional vessel traffic trips associated with the relocation of the maintenance facility approximately 0.5 mile southward along the same stretch of the protected Mare Island shoreline. Therefore, the shoreline wave environment resulting from vessel wake wash, both in the approach to the maintenance facility and at the maintenance facility, would not change.

Alternative 1 would displace up to 210 square feet of jurisdictional waters of the U.S. with the placement of piles. This is considered a small area in the expanse of Mare Island Strait, and therefore would have a minimal effect on water resources. Additionally, prior to construction and operation of the proposed ferry maintenance facility, WETA will obtain all applicable permits (including Section 401, Section 404, and Section 10 permits) required for activities involving placement of fill in the form of piles in jurisdictional and navigable waters of the U.S. (refer to Section 3.1.2, Water Resources Regulatory Setting). No construction would occur until these permits have been acquired. WETA would be responsible for implementing any avoidance measures or mitigation measures specified in these permits, which could further reduce the potential minor impacts on water resources.

Impacts on Water Quality

Construction activities, such as pile placement, would disturb potentially contaminated sediments and result in localized, temporary increases in turbidity levels. Although these effects are short term and would greatly diminish with distance from the activity, sediment and sediment-borne pollutants may be mobilized away from the lease area under suitable hydrologic and hydraulic conditions. The use of floating platforms, a gangway, and barges in place of solid fill would minimize alterations to Mare Island Strait. The piles would be driven underground, which would prevent the need for dredging or excavation, thus minimizing the potential for erosion as well as impacts to aquatic life.

Waterside construction activities would include the use of a variety of diesel-powered equipment. Spills of diesel fuel, hydraulic oil, and lubricants could occur, potentially impacting water quality. In addition, there is potential for degradation of water quality from discharge of construction-related materials and chemicals, either directly or conveyed via stormwater discharges. As a condition of its permits (e.g., the CWA Section 401 permit obtained for the project [Corps File No 2006-302430S]), WETA will implement measures to reduce and minimize impacts on water quality, including the following:

- Locate waterside facility away from the quay wall, in deeper water, to avoid dredging.
- Use a grated gangway to allow 50 percent light through, and reduce shadow impacts.

- Minimize total number of piles while meeting safety and performance criteria for the docks.
- Adhere to an in-water work window of August 1 through October 15.
- Use an unconfined bubble curtain around each steel pile during installation.
- Manage accidental spills through implementation of an Accidental Spill and Discharge Response Plan prepared in accordance with the RWQCB's Contingency Planning and Notification Requirements for Accidental Spills and Discharges.
- Prepare and implement an Industrial Storm Water Pollution Prevention Plan, which will specify material handling and storage, and specify measures to collect and convey stormwater runoff. All underground tanks will be installed in water-tight vaults, and fuel tanks will be equipped with leak detection alarms.
- Manage soil and groundwater in accordance with the approved Soil and Groundwater Management Plan for Mare Island, which includes preparation of a site-specific Work Plan to be approved by the California DTSC.
- Manage accidental spills in accordance with the Accidental Spill and Discharge Response Plan prepared in accordance with the San Francisco Bay RWQCB's Contingency Planning and Notification Requirements for Accidental Spills and Discharges.
- Manage stormwater runoff through implementation of a Stormwater Pollution Prevention Program.

With the implementation of these measures, construction of Alternative 1 would result in minor, short-term indirect impacts to water quality.

Operation of the facility could result in the accidental release of fuels or trash into Mare Island Strait. To prevent and/or minimize the discharge of pollutants (e.g., fuel spills and litter), WETA will implement applicable BMPs, such as preparation and implementation of a stormwater pollution prevention program; emergency procedure training; immediate cleanup of hazardous material spills; keeping the facility free of litter, and providing trash receptacles; and development and maintenance of a Hazardous Materials Business Plan. Furthermore, the ferry service would continue to operate in full accordance with the U.S. EPA vessel general permit (VGP). The U.S. EPA currently regulates discharges incidental to the normal operation of commercial vessels greater than 79 feet in length and operating as a means of transportation primarily through the VGP. The first VGP was issued in 2008 and was effective until December 19, 2013. On March 28, 2013, the U.S. EPA reissued the VGP for another 5 years. That reissued permit, the 2013 VGP, took effect December 19, 2013, and superseded the 2008 VGP (U.S. EPA, 2013).

Implementation of BMPs and adherence to water quality permits and approvals would minimize adverse effects on water quality from waterside construction activities and facility operation. Therefore, Alternative 1 would result in minor short- and long- term indirect adverse effects to water quality.

The placement of guide piles and floating platforms, a gangway, and barges would result in the addition of a small amount of fill in the 100-year flood zone. The new piles would not impede or redirect flood flows. The use of floating infrastructure in place of solid fill would minimize impacts to floodplains. Furthermore, the project would be designed to minimize adverse indirect impacts to floodplain values. Therefore, Alternative 1 would result in no significant long-term impacts to floodplains.

Therefore, Alternative 1 would have no significant impact to water resources.

Alternative 2

Similar to Alternative 1, granting of a submerged land lease under Alternative 2 would have no direct impacts to water resources. Indirect impacts to water quality, floodplains, and the shoreline wave environment associated with this alternative would be similar to those described above for Alternative 1. However, Alternative 2 would encompass a slightly larger waterside footprint (approximately ~~16,000~~ ***16,987*** square feet instead of ~~13,700~~ ***14,687*** square feet) and additional berths, and introduce more fill into the strait. Similar to Alternative 1, the small addition of piles is considered a minor impact. Implementation of Alternative 2 would result in the installation of 54 piles, which would displace approximately 295 square feet of waters of the U.S. Under this alternative, WETA would obtain the same permits and implement the same BMPs described under Alternative 1, which would minimize indirect impacts on water quality. Alternative 2 would result in minor short- and long- term indirect adverse effects to water quality.

Therefore, Alternative 2 would have no significant impact to water resources.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop waterside facilities. Therefore, no direct or indirect impacts to water resources would occur as a result of the No Action Alternative.

4.1.3 Air Quality (including Greenhouse Gas Analysis)

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to air quality or GHG emissions. However, approval of the submerged land lease would indirectly create air quality emissions related to construction and operation of the waterside activities at the maintenance facility. The proposed operational activities are not anticipated to change in magnitude of emissions relative to the existing ferry maintenance facility, but would change the location of the existing ferry maintenance activities and associated emissions.

Operation of construction equipment would contribute to short-term increased emissions of CO, oxides of nitrogen (NO_X), PM_{10}, $PM_{2.5}$, sulfur dioxide, and volatile organic compounds (VOCs). As noted previously, although the GCR is not applicable to the Proposed Action, construction emissions were nevertheless analyzed to determine whether GCR emission thresholds would be exceeded. Worst-case annual unmitigated emissions from waterside construction activities were estimated using OFFROAD2011 and Harbor Craft model emission factors. Emissions are calculated based on assumptions regarding the type and amount of equipment used, as well as duration of construction activities; refer to Appendix D for a description of the equipment and duration assumed for the emission calculations. As shown in Table 4-1, the construction emissions calculated for Alternative 1 would be well below the applicable GCR threshold emission rates. Construction of Alternative 1 would not result in significant indirect adverse impacts to air quality.

Increased emissions from the operation of the ferry terminal are expected to be negligible. The waterside components would primarily be used for overnight moorage, daily fueling, and light maintenance. These activities are anticipated to result in minimal air quality emissions, commensurate with current maintenance activities. The Vallejo ferry service has four vessels that are primarily used for the Vallejo service. Alternative 1 would not result in additional vessels, increase the distance traveled by vessels, or increase the frequency of vessel trips or maintenance activities relative to current operations. Passenger loading and unloading could occur at the new maintenance facility on Mare Island due to vessel travel to and from the Vallejo Ferry Terminal. Although this does not occur at the current maintenance facility, no

Table 4-1
Estimated Worst-Case Annual Emission Rates for Construction and Applicable GCR Emission Threshold Rates

Pollutant	Emission Rate (ton/year)	GCR Emission Threshold Rate[1] Nonattainment (tons/year)
carbon monoxide	0.57	100 (maintenance area)
NO_X	0.78	100 (marginal nonattainment, ozone precursor)
PM_{10}	0.04	N/A
$PM_{2.5}$	0.04	100
sulfur dioxide	<0.001	N/A
VOC	0.07	100 (marginal nonattainment, ozone precursor)

Source: U.S. EPA, 2013

Notes:

GCR = General Conformity Rule; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns; VOC = volatile organic compounds

[1] *GCR determinations are based on Federal attainment designations. Air pollutants that are taken into consideration for maintenance of Federal standards do not have a de minimis threshold.*

addition vessel trips associated with passage use would occur because the passengers would ride on ferries that currently cross between the maintenance facility and the Vallejo Ferry Terminal. Most passengers are expected to walk or bicycle the short distance to the ferry maintenance facility from locations on Mare Island, and the use of the ferry by passengers as an alternative to automobile use would be expected to reduce emissions slightly from existing conditions. Therefore, there would be no indirect adverse air quality impacts resulting from waterside operations. Appendix D provides the Record of Non-Applicability (RONA) pursuant to the Federal CAA.

Based on calculations from OFFROAD and Harbor Craft modeling, Alternative 1 would result in approximately 50 metric tons per year of carbon dioxide equivalent (CO_2e) from the use of equipment during the construction of waterside improvements.

The potential effects of proposed GHG emissions are by nature global and cumulative in their impacts, since individual sources of GHG emissions are not large enough to have an appreciable effect on climate change. Therefore, an appreciable impact on global climate change would only occur when proposed GHG emissions combine with GHG emissions from other human-made activities on a global scale. Given the relatively small quantity of GHG emissions associated with construction and because implementation of this alternative would not result in additional vessels, increase the frequency of vessel trips, or increase maintenance activities, Alternative 1 would have minor, indirect, short-term impacts, and negligible long-term impacts related to GHG emissions.

In addition, the proposed relocation of the maintenance facility would decrease the distance that the vessels travel to the Vallejo Ferry Terminal. Therefore, Alternative 1 would provide a slightly beneficial impact because the vessels would travel fewer miles. Additionally, although it is speculative to predict the number of commuters that may board at the maintenance facility, the passenger service provided by Alternative 1 could reduce automobile-related air emissions by reducing the number or distance of vehicle trips from ferry passengers who would otherwise drive to the Vallejo Ferry Terminal.

The primary predicted result of global climate change in the San Francisco Bay Area is an expected rise in the mean water level. Alternative 1 has been designed to accommodate projected sea levels within the project's useful life. For example, the proposed berths float and would therefore rise and fall with the tide. Similarly, proposed pilings were designed to address projected sea levels along with other factors that may influence tidal elevations at the lease area. For these reasons, the impact of global climate change on Alternative 1 is considered minor.

Therefore, Alternative 1 would have no significant impact on air quality, including GHGs.

Alternative 2

Alternative 2 would result in the same submerged land lease as Alternative 1, and would therefore not result in direct air quality or GHG impacts. Impacts to air quality would be similar to those described above for Alternative 1. However, Alternative 2 would accommodate two additional berthing areas, which would result in slightly greater construction emissions compared to Alternative 1. These increased air quality emissions are projected to be below the GCR thresholds.

Although Alternative 2 would construct two additional berths, operation would not result in additional vessels traveling in the strait. Therefore, operational impacts associated with this alternative would be the same as those described above for Alternative 1.

GHG emissions from construction indirectly associated with Alternative 2 would be slightly higher than those described above for Alternative 1, due to the construction of two additional berths. The construction of two additional berths would be a very minor increase in GHG emissions. Furthermore, these emissions would be short-term during the construction phase. Alternative 2 would not result in additional vessels, increase the frequency of vessel trips, or increase maintenance activities. Therefore, Alternative 2 would have minor, indirect, short-term impacts, and negligible long-term impacts related to GHGs. Similar to Alternative 1, this alternative would result in slightly beneficial impacts, because the vessels would travel a shorter distance to the Vallejo Ferry Terminal and because the passenger service could reduce the vehicle miles traveled by commuters.

Similar to Alternative 1, global climate change would have a minor impact on Alternative 2 because both alternatives are located at the same site and are therefore subject to similar climate conditions.

Therefore, Alternative 2 would have no significant impact to air quality, including GHGs.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop the waterside maintenance facilities. Therefore, no direct or indirect air quality emissions or GHG impacts would occur at the lease area under the No Action Alternative.

4.1.4 Noise and Vibration

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct noise and vibration impacts. However, the subsequent construction and operation of waterside components of the ferry maintenance facility by WETA would have potential indirect effects. Section 4.2, Biological Resources, provides a discussion of potential noise and vibration effects on biological resources.

The FTA general method for assessing noise impacts assumes the two loudest pieces of equipment of a construction process or activity may be operating simultaneously. Therefore, this analysis predicts noise from waterside improvements using a pile driver and crane, which typically generate noise levels of 101 dBA and 83 dBA, respectively, measured at 50 feet from operating equipment (FTA, 2006). Noise levels were calculated at the nearest sensitive receptors, which are the residential homes located west of the lease area along Walnut Avenue and the Mare Island Outpatient Clinic along Railroad Avenue (Figure 3.1.4.1). As shown in Table 4-2, predicted construction noise levels at the nearest sensitive receptors would range from 73 dBA to 76 dBA, and are much lower than the 90 dBA hourly L_{eq} FTA general assessment residential threshold. Therefore, there would be short-term, minor construction noise impacts.

Table 4-2
Predicted Waterside Construction Noise Levels at Nearest Sensitive Receptor Locations

Sensitive Receptor	Distance to Lease Area (Feet)	Equipment Used	Predicted Construction Noise Levels[1] (dBA)
Residential Homes	1,210	Pile Driver Mobile Crane	73
Mare Island Outpatient Clinic	850	Pile Driver Mobile Crane	76

Sources: FTA, 2006.

Notes:

dBA = A-weighted decibel

[1] *Represents maximum noise level, assuming loudest two pieces of equipment operating simultaneously.*

Construction of the waterside improvements would require pile driving, which would generate groundborne vibration that could potentially cause annoyance to sensitive receptors in the area. Table 4-3 shows the vibration velocity levels in decibels (L_v) associated with the waterside construction equipment that are expected to have the largest vibration source magnitudes (i.e., L_v at 25 feet reference distance from the indicated vibration source).

Table 4-3
Construction Equipment Vibration Levels at Nearby Sensitive Receptors

Equipment	Reference L_v (VdB) at 25 feet	Approximate L_v (VdB) at Mare Island Outpatient Clinic (850 feet)	Approximate L_v (VdB) at Residential Homes (1,210 feet)
Vibratory ("sonic") pile driver (upper end of value range)	105	59	54
Vibratory ("impact") pile driver (upper end of value range)	112	66	61

Source: FTA, 2006

Notes:

Lv = vibration level ; VdB = vibration velocity decibels

Using an FTA algorithm, these reference vibration levels are used to predict L_v at the Mare Island Outpatient Clinic and the nearby residential homes. At 61 L_v for the Mare Island Outpatient Clinic and at 66 L_v at the residential homes, vibration levels would be well below the acceptable FTA vibration standard threshold of 72 L_v for "frequent events" (i.e., more than 70 vibration events from the same source per day, for a Category 2 land use). Therefore, there would be short-term, minor construction vibration impacts.

As previously discussed, land uses at and adjacent to the lease area are primarily industrial. Operation of the type of equipment used at the site is not anticipated to noticeably increase noise or vibration levels in the area. Given the existing industrial nature of the site, it is anticipated that projected noise and vibration levels during operation would not cause exposure of persons to noise levels in excess of standards established in the local noise ordinance or in excess of the standards of other agencies, such as the FTA. Also, noise and vibration impacts from the operation of the new facility would not differ appreciably from those at the nearby existing ferry maintenance facility. For these reasons, implementation of Alternative 1 would result in minor, short-term, indirect construction impacts and no long-term, indirect operational impacts to noise and vibration.

Therefore, Alternative 1 would have no significant impact to noise or vibration.

Alternative 2

As with Alternative 1, the issuance of a submerged land lease under Alternative 2 would not result in direct noise or vibration impacts. Alternative 2 would indirectly result in a larger waterside component. Implementation of this alternative would require the same type of construction activities and equipment as Alternative 1, and therefore would result in the same impacts described above. The addition of two berthing areas with installation of 14 additional piles would negligibly increase the noise and vibration generated at the site during construction and operations. This alternative would result in minor, short-term, indirect construction impacts and no indirect long-term operational impacts to noise and vibration.

Therefore, Alternative 2 would have no significant impact to noise or vibration.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop the waterside maintenance facilities. Therefore, no direct or indirect noise and vibration impacts would occur as a result of the No Action Alternative.

4.1.5 Visual Resources

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to visual resources. However, approval of the lease would indirectly create visual changes as a result of the construction and operation of the in-water maintenance facility components. The addition of construction equipment such as a barge-mounted crane with pile-driving equipment would be slightly noticeable to drivers and passing vessels. However, the watercraft, barges, and cranes would be consistent with the industrial landscape, including the existing watercraft, barges, and cranes currently located in the surrounding area (Figure 3.1.5.1). Therefore, construction of the project would not result in indirect, short-term visual impacts.

During operation, moored vessels would be visible above the seawall. Given the existing environment of water-oriented use, the proposed berths and vessels would be visually consistent with the character of the surrounding area. Because new construction at the site would comply with design guidelines for the reuse

of Mare Island, Alternative 1 could have a minor beneficial impact on the study area. Figure 4.1.5.1 shows a simulated view from the Mare Island Promenade looking north, and Figure 4.1.5.2 shows a view looking southeast. Additionally, because the existing and proposed facilities are located approximately 0.5 mile apart and would have very similar features, Alternative 1 would result in a very minor change to the visual character of the surrounding area. Implementation of Alternative 1 would not result in indirect, long-term adverse impacts to visual resources.

Therefore, Alternative 1 would have no significant impact to visual resources.

Figure 4.1.5.1
Mare Island Promenade Looking North

Figure 4.1.5.2
Mare Island Promenade Looking Southeast

Alternative 2

Implementation of Alternative 2 would involve the same submerged land lease as Alternative 1, and would therefore not result in direct visual impacts. Indirect impacts associated with this alternative would be similar to those described for Alternative 1. However, Alternative 2 would accommodate two additional berthing areas. Alternative 2 would be implemented at the same location as Alternative 1, and therefore would occur in the same existing environment of water-oriented use. Although Alternative 2 would encompass a slightly larger footprint, it would also be visually consistent with the character of the surrounding area. Similar to Alternative 1, Alternative 2 would also comply with design guidelines for Mare Island, and could therefore have a minor beneficial impact at the lease area, and would result in a very minor change to the visual character of the region. Implementation of Alternative 2 would therefore result in no short- or long-term indirect adverse impacts to visual resources.

Therefore, Alternative 2 would have no significant impact to visual resources.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop waterside facilities. Therefore, no direct or indirect visual changes would occur as a result of the No Action Alternative.

4.1.6 Transportation

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to transportation impacts. Implementation of Alternative 1 could result in indirect impacts to transportation as a result of construction and operation of waterside improvements. In-water construction equipment would be directly adjacent to the shoreline, and would not impede or restrict access to vessels that traverse the strait. The proposed maintenance facility site is not currently in use or open to the public; therefore, no people or employees are using the site, and there is little vehicular or pedestrian traffic. Many of the nearby properties are also uninhabited, and the roads near the site do not experience a high volume of traffic. Vehicular use of adjacent roadways is minimal; therefore, the additional vehicles accessing the site during construction as a result of work crew access or materials deliveries would have a short-term, minor adverse impact on local traffic.

Because the existing promenade adjacent to the lease area does not continue through to adjacent areas, the presence of construction personnel and equipment as well as restricted access for work zones would have no impact on pedestrian access.

Waterside operations would not require any automobiles. However, operation of the landside facility would involve use of one eight-passenger mini-van (existing at the current maintenance facility), one 1-ton shop pickup truck (existing at the current maintenance facility), two small utility vehicle carts (existing), and two small forklifts (existing at the current maintenance facility). These vehicles would be used on the maintenance facility site and would therefore not interrupt existing traffic circulation on adjacent and regional roads. Operation of the ferry maintenance facility would not restrict or impede boat traffic in the strait. The Vallejo ferry service currently operates a maintenance facility approximately 0.5 mile northwest of the proposed lease area. The proposed project would not result in additional vessels traveling in the strait, but would rather move the existing berthing area to a new location slightly southeast of the current location. Correspondence from the USCG stated that relocating the vessels to the new proposed waterside site would not pose a significant navigational hazard to vessel traffic in the strait (USCG, 2010).

Once Alternative 1 is operational, WETA estimates that the ferry maintenance facility could accommodate 60 one-way ferry passengers per existing vessel trip (WETA, 2013). Passenger service from Mare Island would be limited to three vessels each morning and evening. Potential passengers are expected to come from the residential area approximately 1,250 feet to the west of the lease area. Therefore, passenger service would not generate significant traffic on adjacent roadways or the need for additional parking, because passengers would walk or use existing street parking. Passenger service would not require additional vessels and would not alter the path that the ferries travel through the strait. Therefore, the potential for additional ferry passengers would not result in indirect adverse navigation impacts in the strait. Once operational, the new facility would enhance WETA's operations and contribute to its goal of building and operating a seamless transit system that responds to the region's congestion management needs.

For the reasons discussed above, Alternative 1 would have minor short-term indirect adverse impacts to transportation and would have substantial long-term indirect beneficial impacts to transportation. Therefore, Alternative 1 would have no significant adverse impact to transportation.

Alternative 2

Similar to Alternative 1, issuance of a submerged land lease under Alternative 2 would not result in direct transportation impacts. Alternative 2 would accommodate two additional berths, which would result in a slightly larger footprint during construction and operation of the proposed maintenance facility. Similar to Alternative 1, construction of Alternative 2 would not restrict or impede access to boats traveling through the strait. As with Alternative 1, vehicular use of adjacent roadways is minimal; therefore, the additional vehicles accessing the site during construction as a result of work crew access or materials deliveries would have a minor short-term adverse impact on local traffic. Furthermore, the existing promenade is currently not continuous in the proposed maintenance facility site to adjacent areas; therefore, the presence of construction personnel and equipment, as well as restricted access for work zones, would have no impact on pedestrian access.

Once Alternative 2 is operational, the passenger service would be the same as Alternative 1; this alternative would accommodate the same number of ferry passengers. Similar to Alternative 1, Alternative 2 would not generate significant traffic on adjacent roadways or the need for additional parking, because passengers would walk or use existing street parking. The USCG determined that this alternative would not result in navigational restrictions or hazards. Similar to Alternative 1, the new facility would enhance WETA's operations and contribute to its goal of building and operating a seamless transit system that responds to the region's congestion management needs. Alternative 2 would have minor short-term indirect adverse impacts to transportation and would have substantial long-term indirect beneficial impacts to transportation.

Therefore, Alternative 2 would have no significant adverse impact to transportation.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop the waterside maintenance facilities. No direct or indirect adverse transportation impacts would be expected from implementation of the No Action Alternative.

4.1.7 Land Use

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to land use. Approval of the submerged land lease would indirectly impact land use during construction and operation of in-water project components. The new waterside facilities would result in construction of new berths and floats as well as the relocation of two existing floats, resulting in placement of additional fill in the strait. These facilities would be a new permanent land use at the project lease area.

BCDC is the authorized agency for the oversight and implementation of the CZMA in San Francisco Bay. The submerged lands are owned by the Navy, and Federal activities that affect resources of the coastal zone must be evaluated for their consistency, to the extent practicable, with BCDC's Bay Plan policies, pursuant to the CZMA. In 2007, the BCDC issued a permit for the construction of a new facility at the landside area (BCDC, 2007b). In 2011, the permit was amended to include a revised landside site plan. Consistent with BCDC plans and policies, the new maintenance facility would provide a public benefit by supporting the development of public transportation in the region; the new fill would be required for a water-oriented priority use; and the site plan includes public access to the maximum extent practicable. The BCDC has reviewed the project as a whole, and issued a Major Permit on June 12, 2014 (Appendix A). ***As a result of the design refinement discussed in Section 1.4.2, WETA has applied for an amendment to this permit, which will not require changes to permit conditions presented below.***

Implementation of the Proposed Action would not interfere with access to the proposed public promenade that is planned for development along the shoreline between the in-water vessel berths and the landside ferry maintenance facility. The project is consistent with the land use goals set forth in the *Mare Island Specific Plan*, which states: "A ferry pier potentially could be located along the Waterfront Promenade near 7th Street. The service would connect Mare Island with San Francisco, Tiburon, Larkspur, and other points along the San Pablo Bay and Sacramento Delta Region. In the event that a ferry pier is constructed, initial service could be peak period only to San Francisco and the City of Vallejo" (Winzler & Kelly, 2011). Although the project would create vessel berths and ferry maintenance facilities rather than a public ferry terminal with service to points around San Francisco Bay, Alternative 1 would accommodate passengers between Mare Island and Vallejo as a secondary use. Because Alternative 1 is consistent with land use development goals in the study area, there would be no short- or long-term indirect adverse impacts on land use.

Therefore, Alternative 1 would have no significant impact on land use.

Alternative 2

Similar to Alternative 1, issuance of a submerged land lease under Alternative 2 would not result in direct land use impacts.

Alternative 2 would result in indirect impacts similar to those of Alternative 1, but would also include two additional berths resulting in additional fill in Mare Island Strait. Similar to Alternative 1, these facilities would be a new permanent land use. As described above, the BCDC has issued a permit for the construction of a new maintenance facility at this site, with a larger construction footprint to accommodate the two additional berths in the proposed lease area. Alternative 2 would be located at the same site and have the same land uses as Alternative 1. Alternative 2 would not interfere with the proposed public promenade, and it would be consistent with land use development goals at the study area. Implementation of Alternative 2 would not result in short- or long-term indirect adverse impacts to land use.

Therefore, Alternative 2 would have no significant impact to land use.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop the waterside maintenance facilities. No direct or indirect adverse land use impacts would be expected from implementation of the No Action Alternative.

4.2 BIOLOGICAL RESOURCES

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to biological resources, nor direct or indirect impacts to migratory birds. However, it would result in indirect impacts on biological resources related to the construction and operation of in-water facilities.

Most of the sensitive fish species that have the potential to be present in the lease area are likely to be present only during certain seasons; however, green sturgeon could occur in the project site at any time of year. In addition, common fish species could occur in the lease area at any time of year. Construction of the waterside improvements could result in indirect impacts to these common and special-status fish species if they are present in Mare Island Strait during construction activities; listed anadromous salmonids are not expected to be in the study area during the in-water construction period of August 1 through October 15, and therefore would not be impacted by construction activities.

Pile driving could cause disturbance of bottom sediment and increased turbidity, and disturbed sediments could contain contaminants. When a vibratory hammer is used, very little turbidity is expected; however, a small amount of temporary turbidity disturbance would occur in close proximity to the pile, which is expected to quickly dissipate. If an impact hammer is used—and consequently, a bubble curtain is installed to reduce sound waves—turbidity could occur in a larger area surrounding the activity. However, the potential impact from turbidity and any released contaminants would be localized and short term, and is not expected to have a lasting impact on the common and special-status species, designated critical habitat, or EFH. Similarly, construction activities are not expected to generate levels of turbidity that would be harmful to benthic invertebrates. Standard BMPs would be implemented during construction to minimize potential impacts on water quality, such as training workers to identify and prevent releases of pollutants, using containment booms to capture floating demolition debris, and removing solid waste from the site regularly. Implementation of these measures would reduce the potential impact to benthic invertebrates and fish from degraded water quality during construction.

The use of impact pile drivers can produce high-intensity underwater noise capable of injuring or killing fish (Caltrans, 2009). In addition, this high-intensity sound may cause changes in behavior, such as the cessation of feeding, or fleeing behaviors. Vibratory pile drivers produce overall lower sound levels; they are not expected to cause injury or mortality, but may still cause behavioral effects to exposed fish (Caltrans, 2009). Intense underwater noise could temporarily exclude fish from using the affected area as designated critical habitat or EFH.

Consultation with the NMFS and USFWS pursuant to Section 7 of the ESA for the Vallejo-Baylink Ferry Maintenance Facility Project was initiated by the Corps during its review of the CWA Section 404 permit application. The NMFS consultation was initiated on March 3, 2011, as part of the Corps review for the City's proposed larger footprint maintenance facility (i.e., Alternative 2). In February 2012, NMFS and the Corps were advised that funding shortfalls may require the City to scale back the size of the project. Because specific changes to the project had not been determined at that time, the ESA consultation continued for the larger footprint project with the understanding that a smaller footprint project may

ultimately be implemented. Because Alternative 1 is in the footprint of Alternative 2, the findings in the NMFS Biological Opinion are valid for both Alternative 1 and Alternative 2. The USFWS consultation was initiated on November 6, 2013, and reflects the proposed project as described under Alternative 1.

In its Biological Opinion addressing the potential effects of the Vallejo-Baylink Ferry Maintenance Facility Project, NMFS determined that the project would not jeopardize ESA-listed species, would not adversely modify or destroy designated critical habitat, and would have minimal effects on EFH (Appendix A). Similarly, in its Biological Opinion, USFWS determined that while the project may result in relatively small effects to the delta smelt, it would not jeopardize this or other ESA-listed species or designated critical habitat (Appendix A).

WETA has incorporated avoidance, mitigation, and conservation measures into the project as a result of the 2011 *Vallejo-Baylink Ferry Maintenance Facility* CEQA IS/MND, and associated project permits (e.g., refer to Section 4.1.2 Water Resources). These measures will reduce potential impacts on biological resources, including ESA-listed species. Construction in Mare Island Strait will be limited to the period from August 1 to October 15 to avoid the migration period for salmonids and other special-status species.

All terms and conditions listed in the 2012 NMFS Biological Opinion and 2014 USFWS Biological Opinion, and the measures in the 2014 amended CDFW Streambed Alteration Agreement, will be implemented (refer to Appendix A). ***As a result of the design refinement discussed in Section 1.4.2, WETA has applied for an amendment to the CDFW permit, which will not require changes to permit conditions presented below.*** These terms include erosion control measures, spill prevention measures, pile-driving restrictions, biological monitoring requirements, and compensation for fill and hydroacoustic impacts. WETA has prepared a draft mitigation plan that proposes the removal of piles on non-Navy submerged lands in Mare Island Strait as compensation for project impacts (GHD, 2013). The 40 piles required for Alternative 1 would impact approximately 210 square feet of soft-bottom habitat, which is designated critical habitat for green sturgeon, winter-run Chinook salmon, and Central California Coast DPS steelhead. Given the expansive area of Mare Island Strait, the impacts of this small reduction of critical habitat and EFH would be insignificant. The waterside improvements would cover (shadow) approximately ~~13,700~~ ***14,687*** square feet of estuarine habitat, which would include approximately ~~7,800~~ ***8,787*** square feet of newly constructed facilities and approximately 5,900 square feet of structures relocated from the current maintenance site. Shadowing of estuarine waters may result in alteration of benthic habitat and a reduction in benthic or planktonic productivity due to reduction in solar energy (Washington State Transportation Center, 2001). The shadow that would be caused by the proposed project is broken by gaps between the structures, such as narrow fingers for the berths, which have large, open areas between them. The ferries are in service during much of the day, and would not be permanently moored at the lease area. In addition, the gangway would be designed with grated surfaces to allow some light through.

The lease area is already subject to use as a maritime facility, and Mare Island Strait currently experiences heavy boat traffic. Additionally, because the existing and proposed facilities are located approximately 0.5 mile apart and would have very similar biological resources, Alternative 1 would not result in new operational impacts on biological resources. The location of these impacts would simply occur in locations closer to the Proposed Action area versus the existing location.

As described above and with implementation of permit measures and BMPs, construction of Alternative 1 would result in short-term, minor, adverse indirect impacts to special-status fish species and their designated critical habitat, and to EFH. This alternative would have no long-term adverse impacts to these resources.

Therefore, Alternative 1 would have no significant impact to biological resources.

Alternative 2

As with Alternative 1, granting of a submerged land lease under Alternative 2 would not result in direct biological impacts.

Waterside construction and operation of Alternative 2 would be similar to Alternative 1 except that Alternative 2 would result in the construction and operation of two additional berths. Alternative 2 requires that 54 piles be installed, which would displace approximately 295 square feet of soft-bottom habitat, 125 square feet more than Alternative 1. Alternative 2 would indirectly result in approximately ~~16,000~~ ***16,987*** square feet that would shadow estuarine habitat, approximately 2,300 square feet more than Alternative 1.

Overall, Alternative 2 would result in the same types of biological impacts as those described above for Alternative 1, because the same avoidance and mitigation measures, construction methods, and timing would apply. However, the construction of two additional berths would result in slightly greater indirect impacts from waterside structures as a result of the increase in turbidity, underwater sound, underwater shading, and habitat modification. The avoidance and mitigation measures described above for Alternative 1 would also apply to Alternative 2. Similar to Alternative 1, because the lease area is already subject to use as a maritime facility and Mare Island Strait currently experiences heavy boat traffic, waterside operations associated with Alternative 2 would have no adverse impact to biological resources.

As described above, construction of Alternative 2 would result in short-term, minor, adverse indirect impacts to special-status fish species and their designated critical habitat, and to EFH. This alternative would have no long-term impacts to these resources.

Therefore, Alternative 2 would have no significant impact to biological resources.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop the waterside maintenance facilities. Therefore, no direct or indirect impacts to biological resources would occur at the lease area under the No Action Alternative.

Minimization Measures

To reduce potential environmental effects, the following mitigation measure will be implemented by WETA.

BIO-1. Minimize Impacts to Salmonids and Sensitive Aquatic Species during Construction

WETA will incorporate the following into the construction documents:

- *Construction in Mare Island Strait will be limited to the period from August 1 to October 15 to avoid the migration period for salmonids and other special-status species.*
- *All conservation measures and terms and conditions listed in the 2012 NMFS Biological Opinion, 2014 USFWS Biological Opinion, and in the 2014 Amended CDFW Streambed Alteration Agreement (refer to Appendix A).*

4.3 CULTURAL RESOURCES

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to cultural resources. However, the subsequent construction and operation of waterside components of the ferry maintenance facility by WETA could have potential indirect effects to cultural resources, specifically to the quay wall, a contributing element to the Historic District.

Under this alternative, the proposed gangway landing would not be anchored to the quay wall, thus preventing any direct modification to this historic feature as a result of the gangway. During construction, three 12-inch piles will be installed adjacent to the quay wall, with additional piles between 30 and 200 feet from this feature. The quay wall is composed of precast concrete sheet piles, a pile-supported relieving platform, and tiebacks with deadman anchors. It was designed and built to withstand significant loads from industrial and shipping activity along the waterfront. Based on the structural integrity of the quay wall, use of low displacement pipe piles, anticipated subsurface material, and the method of installation (i.e., pile driving through softer material and drilling into bedrock material), negligible indirect impacts to the quay wall from construction or operation vibration are expected. In addition, a rubber bumper would be attached to the wood fendering currently fronting the quay wall. This bumper and the fendering to which it would be attached would protect the quay wall by cushioning any impacts from incidental contact from vessels that may occur while mooring.

Alternative 1 would indirectly result in the placement of modern elements within the boundaries of a NRHP-listed Historic District; however, as discussed in Section 4.1.5, Visual Resources, these elements are visually compatible with the existing maritime context of the study area, and would not detract from the historic context of the district or affect components of the district that contribute to its overall significance. The landside components of the Historic District have been transferred to the City, and the potential indirect effects to the Historic District from the project as a whole were considered in the context of local and State law, in accordance with the 1997 MOA, as amended. The 2011 IS/MND (Winzler & Kelly, 2011) identifies mitigation measures that will be implemented to reduce these potential impacts to a less-than-significant level.

Therefore, because the minimization measures listed below will be implemented, along with those identified in Appendix C, Alternative 1 would have no significant, direct, or indirect impact to cultural resources.

Alternative 2

Issuance of a submerged land lease under Alternative 2 would not result in direct impacts to cultural resources, but would indirectly result in pile driving and placement of modern elements in the Historic District. Similar to Alternative 1, pile installation would result in negligible vibrational impacts to the quay wall, and implementation of the mitigation measures would reduce potential indirect impacts to cultural resources to below a level of significance.

Therefore, Alternative 1 would have no significant impacts to cultural resources.

No Action Alternative

Under the No Action Alternative, the Navy would not issue the submerged land lease. Consequently, WETA would not develop the waterside maintenance facilities, and no impacts to cultural resources would occur as a result of the No Action Alternative.

Minimization Measures

To reduce potential environmental effects, the following minimization measures, the first three of which were identified in the City's 2011 IS/MND (Winzler & Kelly, 2011) will be implemented as part of the project:

- *CR-1: Ensure that the final project design is in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and the Mare Island Historic District Design Guidelines.*

- *CR-2: If historic features or prehistoric archaeological materials are encountered during project construction on the non-Navy-owned landside portion of the project, the procedures outlined in the Archaeological Treatment Plan for Mare Island (PAR Environmental Services, 2000b) shall be followed.*

- *CR-3: If human remains are encountered during construction activities on the non-Navy-owned landside portion of the project, there would be no further excavation or disturbance of the remains, or of the nearby area until the Solano County Coroner has made the necessary findings as to origin, in accordance with Health and Safety Code 7050.5. In accordance with Public Resources Code 5097.98, if the coroner believes the human remains to be those of a Native American, he or she would contact, by telephone, within 24 hours, the Native American Heritage Commission. The Native American Heritage Commission would immediately notify the most likely descendant (MLD). The MLD would inspect the site of the discovery, and may recommend the means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD would complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The remains would not be damaged or disturbed by further development until the County has discussed and conferred with the MLD regarding their recommendations.*

- *CR-4: In the unlikely event that historic properties, prehistoric archaeological materials, or human remains are encountered during construction in Navy-owned submerged lands, WETA shall stop work, secure the site, and immediately contact the City and the Navy. The Navy will include this requirement as a condition in the Navy submerged land lease.*

4.4 HAZARDS AND HAZARDOUS MATERIALS

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to hazardous and regulated materials.

However, construction and operation of the in-water components of the maintenance facility may result in indirect impacts. Construction and operation of the in-water facilities would involve materials typically associated with commercial and industrial uses, such as diesel fuel, lube oil, and diesel exhaust fluid. Hazardous materials used during construction and operation of the project would be required to be transported, used, and stored in accordance with applicable State and Federal regulations regarding hazardous materials. WETA has committed to the measures documented in the 2011 CEQA IS/MND for the *Vallejo-Baylink Ferry Maintenance Facility*, which are included in Appendix C of this EA. Adherence to these measures would further reduce the impacts related to hazardous and regulated materials.

As discussed in Section 3.4, the potential for encountering a MPPEH item during pile driving is unlikely. While the chance of encountering MPPEH during pile-driving operations is very low, the sediment and/or water column above any MPPEH item encountered would impede the pathway to potential human receptors, thus limiting safety risks to construction workers.

The Navy executed a Final FOSL in September 2013, which identifies the notifications and requirements relating to existing hazardous substances at the lease area. The Final FOSL documents the Navy's determination that the submerged lands are environmentally suitable for lease for the purposes envisioned by WETA. Environmental cleanup on Mare Island is ongoing, and therefore there is potential for impacts resulting from known or unknown environmental issues. However, WETA will work with the Navy and the applicable regulatory agencies to comply with all restrictions related to construction and operation of the proposed maintenance facility and the implementation of the mitigation discussed in Chapter 7. Any necessary notifications or restrictions relating to any existing hazardous substances in the submerged lands will be included in the Navy lease agreement. In particular, the lease will require the lessee to submit a work plan to the Navy, the California DTSC, and the RWQCB for review and comment prior to engaging in any sediment disturbance activities, and will require that the lessee stop all work and notify the Navy immediately if previously unknown contamination, such as, but without limitation, buried debris, stained sediment, unusual odors, or MPPEH is discovered during sediment disturbing activity (Navy, 2013). By complying with the provisions included in the submerged land lease, the potential impacts associated with hazards and hazardous materials would not be significant.

Implementation of Alternative 1 would comply with the State and Federal regulations related to hazardous materials, the measures documented in the 2011 CEQA IS/MND for the *Vallejo-Baylink Ferry Maintenance Facility,* the Final FOSL, and the Navy lease agreement. Therefore, Alternative 1 would result in minor, short- and long-term, indirect, adverse impacts related to hazards and hazardous materials.

Therefore, Alternative 1 would have no significant impact on hazards and hazardous materials.

Alternative 2

Similar to Alternative 1, Alternative 2 would not result in direct impacts related to hazards or hazardous materials. Indirect impacts as a result of the construction and operation of this alternative would be the same as those described above for Alternative 1. As with Alternative 1, implementation of this alternative would comply with the State and Federal regulations related to hazardous materials, the measures documented in the 2011 CEQA IS/MND for the *Vallejo-Baylink Ferry Maintenance Facility,* the Final FOSL, and the Navy lease agreement. As described above, Alternative 2 would result in minor, short- and long-term, indirect, adverse impacts related to hazards and hazardous materials.

Therefore, Alternative 2 would have no significant impact on hazards and hazardous materials.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop the waterside maintenance facilities. Therefore, no direct or indirect changes related to hazards or hazardous materials would occur at the lease area under the No Action Alternative.

Minimization Measures

To reduce potential environmental effects, the following minimization measure will be implemented by the Lessee/WETA:

HZ-1: Compliance with Navy Lease Agreement

The Lessee will comply with the Navy's submerged land lease, which will contain necessary notifications and restrictions and the requirement that the Lessee conduct construction and operation of the maintenance facility, and implementation of the mitigation plan, in accordance with all applicable Federal, State, and local laws and regulations.

4.5 SOCIOECONOMICS

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to socioeconomic resources. Construction of the waterside facility could result in a slight increase in employment during the 3-month construction phase. Operational activities are currently taking place at the existing nearby maintenance facility. The new maintenance facility would be operational prior to removal of the existing facility; therefore, the new facility would not impact employment in the study area.

Alternative 1 would not introduce any new land uses, such as large roads or industrial facilities, that could generate pollution or safety hazards in the community. The census tract that includes the study area does contain a higher proportion of minority and low-income populations than the comparative geographies. However, as documented in Sections 4.1.3, 4.1.4, 4.1.5, and 4.4 of this EA, the Proposed Action would not result in significant impacts related to air quality, noise and vibration, visual resources, or hazardous and regulated materials. Therefore, Alternative 1 would not result in direct or indirect socioeconomic effects, nor would it result in disproportionately high and adverse impacts to minority or low-income populations.

Therefore, Alternative 1 would have no significant impact on socioeconomic resources.

Alternative 2

As with Alternative 1, implementation of Alternative 2 would not result in direct socioeconomic impacts. Alternative 2 would result in the same type of construction activities and equipment as those required for Alternative 1; therefore, the indirect impacts are the same as those described above for Alternative 1. Alternative 2 would not result in direct or indirect socioeconomic effects, nor would it result in disproportionately high and adverse impacts to minority or low-income populations.

Therefore, Alternative 1 would have no significant impact on socioeconomic resources.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop waterside facilities. Therefore, no direct or indirect impacts to socioeconomic resources would occur as a result of the No Action Alternative.

4.6 UTILITIES

Alternative 1 (Preferred Alternative)

The Navy's submerged land lease, as an administrative action, would not result in direct impacts to utilities. However, construction and operation of the in-water components of the maintenance facility may result in indirect impacts on utilities.

Implementation of Alternative 1 would not increase demand for public utilities because it would relocate an existing facility and would not require additional utility services. Therefore, Alternative 1 would not

change or increase demand on utility services. The proposed maintenance facility site has a power supply, and the proposed facilities would connect to the existing energy grid. Alternative 1 would construct a below-grade utility trench that would serve the study area. No utility disruptions are anticipated to be needed during construction; if needed, these disruptions would be temporary and associated with utility tie-ins. Bilge water from the vessels would be processed through an oil/water separator prior to discharging to the sanitary sewer. Because the existing maintenance facility already processes waste bilge water, the proposed in-water project components would not impact the capacity of the sanitary sewer system. Therefore, construction and operation of in-water facilities would not disrupt or diminish the quality of public utility services, nor result in any utility interruptions. Alternative 1 could be expected to have slightly beneficial impacts on utilities as a result of upgrades to the dated utility systems in the immediate vicinity of the project.

Implementation of Alternative 1 would indirectly enhance WETA's operations, supporting its broader goal of building and operating a seamless transit system that responds to the region's congestion management needs. Therefore, implementation of this alternative would result in a long-term, indirect, beneficial impact to utilities. As described above, Alternative 1 would result in no adverse, indirect impacts to utilities, and substantial long-term, beneficial, indirect impacts to utilities.

Therefore, Alternative 1 would have no significant impact on utilities.

Alternative 2

The action under Alternative 2 would be the issuance of a submerged land lease, and would therefore not result in direct impacts to utilities.

Alternative 2 would accommodate two additional berthing areas that would indirectly result in a larger in-water berthing area. Alternative 2 would be located at the same site, would have the same impacts to utilities as Alternative 1, and would result in no adverse, indirect impacts to utilities; Alternative 2 would result in substantial long-term, beneficial, indirect impacts to utilities.

Therefore, Alternative 2 would have no significant impact on utilities.

No Action Alternative

Under the No Action Alternative, the Navy would not issue a submerged land lease. Consequently, WETA would not develop waterside maintenance facilities. Therefore, there would be no direct or indirect impacts related to utilities under the No Action Alternative.

5.0 CUMULATIVE IMPACTS

A cumulative impact is the effect on the environment that could result from the incremental impact of an alternative when added to other past, present, or reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions that take place over time. Accordingly, a cumulative impact analysis identifies and defines the scope of other actions and their interrelationship with the project alternatives if they overlap in space and time. This cumulative impact analysis was developed to be consistent with guidance published by the CEQ (January 1997) and the U.S. EPA (May 1999).

5.1 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

Past actions in the area include the construction, maintenance, and operation of maritime activities and facilities associated with the former Mare Island Naval Shipyard, which was in operation from 1854 until closure of its primary facilities in 1996. After closure, the shipyard was screened for Federal, local, and nonprofit uses. To date, a significant amount of land has been transferred to 17 various Federal and State agencies, to the City, and to private developers for redevelopment under the *Mare Island Specific Plan.* Mare Island has 85 businesses that occupy approximately 3 million square feet, and Touro University educates over 900 full-time students at its campus (CBRE, 2012). To date, 274 homes have been sold (LMI, 2012). These past actions are assumed to create the existing affected environment.

Ongoing and current projects include the use and maintenance of the developed facilities in the study area (e.g., Mare Island), and use of the existing ferry terminal. In addition, the area surrounding the lease area is being monitored by the Navy and LMI for contamination related to former shipyard facilities and activities. Investigations and remedial actions have been conducted near the project vicinity since the early 1980s, and are ongoing. Therefore, these remedial activities are being considered for cumulative analysis. Screening criteria were developed to determine which actions would be considered reasonably foreseeable versus those that are speculative. The cumulative project list is based on correspondence with the Navy, WETA, the City's Planning Department, LMI, and other planning documents and resources (e.g., CEQAnet). A brief description of ongoing and reasonably foreseeable future actions considered in this analysis is presented below. Reasonably foreseeable future actions for this analysis are those considered likely to be implemented by 2016.

Mare Island Specific Plan

Land immediately adjacent to the Mare Island Strait is owned by LMI, and is located in the planning area for the *Mare Island Specific Plan.* Mare Island is a mixed-use, master-planned community being developed through a unique public/private partnership between the City and LMI. The Specific Plan identified 6,265,772 square feet for nonresidential mixed uses, such as office, light industrial, retail, and warehousing. Approximately 1,537,126 square feet are reserved for heavy industrial use; 1,254,698 square feet are reserved for educational and civic uses. The Specific Plan also identified 1,400 residential units and recreational amenities (City of Vallejo, 2008). As described above, development to date includes 85 businesses that occupy approximately 3 million square feet, and Touro University educates over 900 full-time students at its campus (CBRE, 2012). To date, 274 homes have been sold (LMI, 2012). Per consultation with the City's Planning Department (Hightower, 2013), development has been minimal since the 2005 and 2008 amendments of the Specific Plan, due to the weak economy in California. In July 2014, the City released a request for qualifications for the *North Mare Island Development Opportunity*, which may lead to the development of all or part of more than 150 acres of North Mare Island. However, the specifics of future development are not known at this time. Therefore, there are no reasonably foreseeable individual or specific developments related to the Specific Plan that are being considered as current or future cumulative projects.

Vallejo Ferry Maintenance Facility Landside Improvements

Concurrent with the development of waterside improvements, WETA is planning to construct, operate, and maintain facilities for the Vallejo ferry service Maintenance Facility on the land immediately adjacent to the proposed submerged land lease (see Figure 2.2.1). The landside maintenance facility would construct a new warehouse, rehabilitate a few existing buildings for adaptive reuse, and construct and install new fuel facilities and infrastructure. The landside components have been evaluated for compliance with CEQA in an IS, for which an MND was approved by the City in 2011. Construction of this project is anticipated to occur within a few months of construction of the proposed waterside ferry maintenance facility.

WETA Pile, Pier, and Debris Removal in Mare Island Strait

As mitigation, WETA plans to remove 122 creosote piles (and some associated pile apparatus) from two locations on non-Navy submerged lands in Mare Island Strait, remove 1,550 square feet of decking from an abandoned pier located on the east shore of Mare Island Strait, and remove 30 square feet of additional bay fill (e.g., tires, scrap metal, other debris). The piles will be removed by vibratory or "direct pull" method (wrapping a chocker cable or chain around a pile, then using a crane to pull the pile directly upward). Piles that cannot be completely removed would be cut a minimum of 1 foot below the mudline. Debris suspended during pile removal would be captured by a floating boom with absorbent pads, and piles and this debris would be disposed of at a proper landfill. This pile removal activity is anticipated to occur prior to or concurrent with construction of the proposed waterside ferry maintenance facility.

Promenade Improvements

Promenade improvements are planned along the quay wall, to be implemented by WETA and LMI. These improvements would be an extension of the pedestrian promenade constructed approximately 370 feet south of the proposed maintenance facility site, and would include waterfront access, views, and the opportunity for a mixed-use employment area with a strong light industrial component. Construction and operation of the in-water facilities indirectly resulting from both action alternatives would preserve the promenade area for these improvements, in support of the public access goals of the BCDC and the Bay Plan. The portion of the promenade to the south of the proposed maintenance facility site is anticipated to be constructed during spring of 2015, with further improvements progressing north over time.

Mare Island Dry Docks

Allied Defense Recycling received approval to use two dry docks (i.e., docks 2 and 3) to accomplish ship repair and dismantling. According to the Final IS/MND prepared for this project, the total number of ships expected at one time was one to four ships, plus support craft. The landside component of this operation required up to 10 truck trips per day during project operations (City of Vallejo, 2009). In November 2013, a new operator, Mare Island Dry Dock, LLC (MIDD) took over operations of dry docks 2 and 3 for the same purpose.

5.2 ANALYSIS OF CUMULATIVE IMPACTS

The potential cumulative impacts of each alternative to resource areas are discussed below. If an alternative would have no or negligible direct or indirect impacts to a resource, that alternative is assumed to not contribute to cumulative impact on that resource, and is not discussed further in this section. Approval of the submerged land lease would not contribute to direct cumulative impacts. Similarly, the No Action Alternative would not result in direct or indirect impacts; it would not contribute to cumulative impacts; and it is not addressed below. Furthermore, because both Alternative 1 and Alternative 2 would

have no adverse impacts to seismicity, floodplains, visual resources, noise and vibration, land use, socioeconomics, and utilities, they would not contribute to cumulative impacts on these resources.

The geographic scope for cumulative impacts for each resource discussed below is the same as the study area described for the project impact analysis presented in Chapter 4.

Geology

As discussed in Chapter 4, Environmental Consequences, Alternative 1 and Alternative 2 would both result in minor soil displacement of Bay Muds during construction, which could result in temporary, localized, increased turbidity. WETA's proposed pile removals may also result in minor, temporary, localized increases in turbidity. Even if these activities occurred concurrently, the temporary and localized nature of the activities, in the context of the Mare Island Strait, would result in a minor cumulative impact. WETA's planned landside improvements as well as improvements for the planned promenade could result in soil disturbance adjacent to the lease area. MIDD will conduct maintenance dredging to facilitate its use of the dry docks. Dredge depths will be consistent with historical Navy dredge depths, and will be conducted in accordance with regulatory permits and requirements. These projects would comply with applicable site-specific requirements related to soil and erosion, which would minimize any cumulative impacts to soils. Therefore, when considered along with other past, present, and reasonably foreseeable future actions, the action alternatives would result in a minor contribution to cumulative impacts to geology and soils; however, cumulative impacts would not be significant.

Water Resources

Construction and operation of the action alternatives as well as the other reasonably foreseeable future projects, such as WETA's planned pile, pier, and debris removal as well as activities associated with the MIDD efforts, could result in spills of diesel fuel, hydraulic oil, and lubricants, as well as accidental releases of trash and sanitary wastes common on construction sites, which could impact water quality. The potential for degradation of water quality from discharge of construction-related materials and chemicals, either directly or conveyed via stormwater discharges, could result in a substantial cumulative impact to water quality. However, both action alternatives would implement BMPs and adhere to water quality permits and approvals, which would minimize adverse effects on water quality from waterside construction activities and facility operation. Similarly, other ongoing and reasonably foreseeable future projects would adhere to applicable permits and authorizations, such as the NPDES. Furthermore, WETA's removal of creosote piles and debris from Mare Island Strait is anticipated to result in substantial long-term beneficial impacts to water quality. Therefore, when considered along with other past, present, and reasonably foreseeable future actions, the action alternatives would result in a minor contribution to cumulative impacts to water resources; however, cumulative impacts would not be significant.

Air Quality

Based on calculations from OFFROAD and HarborCraft modeling, both Alternative 1 and Alternative 2 would generate approximately 50 metric tons per year of CO_2e from the use of equipment during construction of waterside activities, resulting in minor impacts related to GHG. However, the action alternatives would not result in long-term impacts or ongoing CO_2e emissions. The proposed relocation of the ferry maintenance facility would reduce the distance that the vessels travel, and would therefore have a slightly beneficial impact to air emissions. Other ongoing and reasonably foreseeable future projects, such as WETA's planned landside maintenance facility, would also be expected to result in the emission of GHG. The Metropolitan Transportation Commission and WETA have an agreement to enact BMPs to ensure that expansion of the regional ferry network would provide the greatest possible air quality benefit, which could limit the impacts to air quality from the landside activities (Winzler & Kelly,

2011). Therefore, when considered along with other past, present, and reasonably foreseeable future actions, the action alternatives would result in a minor contribution to cumulative impacts to GHGs; however, cumulative impacts would not be significant.

Transportation

As described in Chapter 4, Environmental Consequences, neither of the action alternatives would result in adverse temporary or permanent impacts to transportation. Furthermore, once operational, implementation of either action alternative would enhance WETA's operations and contribute to its goal of building and operating a seamless transit system that responds to the region's congestion management needs. This beneficial impact would be compounded by the transportation benefits associated with WETA's planned landside improvements for the Vallejo ferry maintenance facility, as well as the planned extension of the promenade. Neither of the action alternatives would impede these adjacent projects; conversely, both Alternative 1 and Alternative 2 would compound the transportation benefits of these projects by providing modern facilities to enhance the waterside area adjacent to the project limits. Therefore, when considered along with other past, present, and reasonably foreseeable future actions, the action alternatives would not contribute to adverse cumulative impacts to transportation resources.

Biological Resources

Construction and operation of the action alternatives could result in short-term, minor, adverse, indirect impacts to biological resources, specifically to aquatic species (i.e., fish), their habitat, and associated EFH. As part of ongoing maritime activities at Mare Island, large boats have been moored in the proposed lease area, shadowing areas in size similar to or larger than the proposed waterside improvements. Given this history of existing shadowing at the site, there would be no impacts from shadowing on special-status fish species, designated critical habitat, or EFH. The lease area is already subject to use as a maritime facility, and Mare Island Strait currently experiences heavy boat traffic. Furthermore, none of the other reasonably foreseeable future projects is anticipated to result in discharges to the water that would impact these species; all actions would be required to be in compliance with the ESA, and State and local actions would also require compliance with State biological resource laws. For example, MIDD dredging activities will be conducted in accordance with the permitting and requirements of CDFW, NMFS, USFWS, BCDC, and other agencies. Therefore, implementation of either Alternative 1 or Alternative 2, when considered along with other past, present, and reasonably foreseeable future projects, would result in a minor contribution to cumulative impacts to biological resources; however, cumulative impacts would not be significant.

Cultural Resources

Construction of either action alternative could indirectly result in vibration impacts to the historic quay wall—a contributing feature of the Mare Island Historic District, which encompasses approximately 65 percent of the former Mare Island Naval Shipyard. Furthermore, both alternatives would indirectly result in the placement of modern elements within the boundaries of the Historic District. Other activities such as the past, ongoing, and future development of Mare Island; the landside features associated with the Vallejo Ferry Maintenance Facility; improvements to the Promenade, and the MIDD operations may continue to introduce other sources of vibration and modern elements and structures into the Historic District. As previously discussed, the *Memorandum of Agreement among the United States Navy, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Layaway, Caretaker Maintenance, Leasing, and Disposal of Historic Properties on the Former Mare Island Naval Shipyard, Vallejo, California,* was completed in connection with the Navy's 1998 joint EIS/EIR for the disposal of Mare Island property, which evaluated, among other things, the effects of the redevelopment of waterfront property along the Mare Island Strait. In 2000, a First Amendment to the MOA was executed, under which the City assumed additional responsibilities for

cultural resources compliance at Mare Island. The landside components of the Historic District have been transferred to the City. Future development in the historic district would be evaluated and considered in the context of this MOA as well as local, State, and Federal laws, as applicable. For example, potential effects to cultural resources from WETA's planned landside components of the Vallejo Ferry Maintenance Facility were considered in the context of local and State law; and with mitigation measures that will be implemented, it was determined that this reasonably foreseeable future action would result in a less-than-significant impact to the Historic District (Winzler & Kelly, 2011). Therefore, implementation of either Alternative 1 or Alternative 2, when considered along with other past, present, and reasonably foreseeable future projects, would result in a minor contribution to cumulative impacts to cultural resources; however, cumulative impacts would not be significant.

Hazardous and Regulated Materials

Construction and operation of the action alternatives, as well as ongoing and reasonably foreseeable projects, would result in the use of hazardous and regulated materials typically associated with construction, commercial, and industrial uses, such as diesel fuel, lube oil, and diesel exhaust fluid. Hazardous materials used for both action alternatives would be required to be transported, used, and stored in accordance with applicable State and Federal regulations regarding hazardous materials.

Other ongoing and reasonably foreseeable future projects, such as the Navy's and LMI's environmental cleanup in the study area and WETA's proposed landside improvements adjacent to the lease area, would result in monitoring, remediation, and removal (e.g., asbestos in building materials) of existing hazardous materials. Furthermore, WETA's removal of creosote piles and debris from Mare Island would eliminate a source of contaminants. Mare Island Dry Dock operations are subject to various permit requirements and State and Federal oversight to ensure proper handling of hazardous materials.

Planned landside subsurface disturbances would follow specific procedures and protocols outlined in the Soil and Groundwater Monitoring Plan (SGWMP) prepared for the Eastern Early Transfer Parcel of the LMI site. The SGWMP identifies protocols that must be followed to ensure that soil disturbance activities and groundwater-related activities, such as dewatering, are conducted in a manner that is protective of human health and the environment, and in a manner that does not interfere with investigation or remediation of the site. Soils would be stockpiled and characterized to determine suitability for reuse at the site or to determine appropriate methods of disposal off site. Groundwater would be containerized for chemical analysis, and depending on the analytical results, would be discharged to the sewage collection system or an approved offsite facility for treatment. If discharged to the sanitary sewer, an Industrial Waste discharge permit would be obtained from the Vallejo Sanitation and Flood Control District, and the discharge would be managed in accordance with permit conditions, including flow rates, discharge hours, and concentration limits for hydrocarbons, sediment, and other potential constituents. The City would require the Contractor to submit a site-specific Work Plan providing details of how soil and groundwater will be managed. The Work Plan would conform to the SGWMP for LMI. The Work Plan would be submitted to the City and the DTSC for approval, prior to excavating. The Work Plan would include, but not be limited to:

- Schedule for the work
- Description of subsurface disturbance equipment and method
- Field sampling and laboratory analysis plan addressing sampling during implementation
- Transportation plan identifying routes of travel and final destination of wastes generated and disposed
- Site-specific Health and Safety Plan
- Identification of any necessary permits, notifications, and agreements
- Future reporting and documentation

Therefore, when considered along with other past, present, and reasonably foreseeable future actions, the action alternatives would not contribute to cumulative impacts to hazardous and regulated materials.

Utilities

The action alternatives and the planned landside ferry maintenance facility, in combination with cumulative regional development, could result in increased demand for utilities on Mare Island. However, development on Mare Island is guided by the *Mare Island Reuse Plan*, which analyzed and mitigated the potential for adverse impacts related to utilities. As mentioned above, implementation of the action alternatives would indirectly enhance WETA's operations, and thus contribute to building and operating a seamless transit system. This beneficial impact would be compounded by the planned implementation of WETA's landside improvements for the Vallejo ferry maintenance facility. Therefore, when considered along with other past, present, and reasonably foreseeable future projects, both action alternatives would contribute to beneficial impacts to utilities.

6.0 OTHER NEPA CONSIDERATIONS

6.1 CONSISTENCY WITH OTHER PLANS, POLICIES, AND CONTROLS

As discussed in Chapters 4 and 5, neither Alternative 1 (Preferred Alterative) nor Alternative 2 would conflict with the objectives of Federal, State, local, or regional land use plans, policies, and controls. The Federal acts, policies, and initiatives that apply to the action alternatives include the ESA, the Migratory Bird Treaty Act, the NHPA, the CWA, and the CAA; refer to Chapter 4 for a full description of the regulatory environment. In addition, both action alternatives would comply with State, local, and regional plans, policies, and controls, such as:

- WETA's *Emergency Water Transportation System Management Plan*
- The City's *Mare Island Specific Plan as Amended and Restated*
- The BCDC's Bay Plan
- The *Soil and Groundwater Management Plan* developed for the lease area

Implementation of the action alternatives would be consistent with the objectives of these plans, and would further the attainment of WETA's goal of building and operating a seamless transit system that responds to the region's congestion management needs, serves in an emergency response capacity, develops innovative environmental solutions for ferry vessels, contributes to economic viability, and improves quality of life.

6.2 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Existing energy consumption includes fossil fuel used by vessels and vehicles that travel in the study area and by equipment associated with ongoing maintenance facilities. Alternative 1 and Alternative 2 would indirectly result in additional energy consumption associated with construction, operation, and maintenance of waterside improvements. However, energy consumption indirectly associated with operation and maintenance of all alternatives (Alternative 1, Alternative 2, and the No Action Alternative) would be commensurate with current use. The construction-related fuel expenditure is a one-time irretrievable commitment of energy resources.

Implementation of the action alternatives has the potential to conserve energy in several ways, including reducing the vehicle miles traveled of personal vehicles in the study area, providing another passenger entrance point for ferry passengers, and increasing the efficiency of WETA's overall transit system.

6.3 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

For the purposes of this document, irreversible commitment of resources is interpreted to mean that once resources are committed, the production or use of those resources would be lost for other purposes throughout the life of the alternative being implemented. An irretrievable commitment of resources defines the resources that are used, consumed, destroyed, or degraded during the life of the alternative that could not be retrieved or replaced during or after the life of the alternative.

The No Action Alternative would not directly require the use of resources. The existing in-water berths and associated landside maintenance facility would continue to operate at the current location. The No Action Alternative would not require additional resources or energy beyond existing use. Therefore, the No Action Alternative would have no impact to the availability of resources.

Both action alternatives would indirectly require the commitment of human and fiscal resources. The additional expenditure of labor required for this alternative would occur predominately during construction. Nonrenewable and irretrievable fossil fuels and construction equipment would be required.

Labor and materials would also be irretrievably committed during the preparation and distribution of materials and equipment. However, the action alternatives would require only a small amount of these materials, which are abundant; their use would not result in a measurable impact to their availability. Labor resource use would be temporary, and limited to construction activity. Funding to implement actions indirectly caused by the action alternatives would not be available for other uses, and would therefore be irretrievable.

Although both action alternatives would result in the commitment of resources as described above, the commitment would not be irreversible or irretrievable.

6.4 SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE OF LONG-TERM PRODUCTIVITY

As documented in Chapter 4, Environmental Consequences, implementation of either action alternative would result in short-term uses of, and short- and long-term impacts to, the environment. However, these uses would be balanced by achieving WETA's long-term objective of building and operating a seamless transit system that responds to the region's congestion management needs, serves in an emergency response capacity, develops innovative environmental solutions for ferry vessels, contributes to economic viability, and improves quality of life. Furthermore, implementation of this alternative would not preclude or alter the range of potential uses of the resources in the area.

6.5 PROBABLY ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED OR MITIGATED

As discussed in Chapters 4 and 5, neither action alternative would result in significant adverse environmental impacts that cannot be avoided or mitigated. Refer to Table 2-1 for a summary of the potential impacts associated with each of the alternatives considered in detail in this document, and to Table 7-1 for a summary of mitigation measures.

7.0 MITIGATION MEASURES

As discussed in Chapters 4 and 5, mitigation measures have been identified to reduce the potential impacts of the action alternatives. Table 7-1 summarizes measures that have been identified to minimize the potential environmental impacts of the Navy's Proposed Action; the table does not include BMPs or specific permit conditions incorporated into the Proposed Action, or mitigation associated with development of reasonably foreseeable future actions on the landside portion of the study area. Mitigation measures and permit conditions for all aspects of the project (i.e., in-water and landside) will be monitored throughout the construction period, in accordance with the 2013 Mitigation Monitoring Plan (Appendix A), as well as the Mitigation Monitoring and Reporting Program (Appendix C).

Table 7-1
Summary Table of NEPA Mitigation Measures

Mitigation Measure GEO-1	
Resource Affected	**Soils**
Description	*GEO-1: Design Level Geotechnical Investigation:* Design and construction will address the recommendations made in site-specific design-level geotechnical reports prepared for the project. The geotechnical recommendations will be incorporated into the final plans and specifications for the project and implemented during construction. Recommendations from the Draft 2011 Geotechnical include, but are not limited to, the following: • Dock Pile Foundations: Single dock and fender piles will require bracing to reduce deflections and the potential for unrecoverable ground deformations at the pile sockets. Dock pile foundations will be constructed in accordance with the engineering analysis to be performed for the project.
Anticipated Benefit	Promote seismic stability of facility
How it Will Be Implemented	Incorporation into construction documents
Criteria for Evaluating	Verify incorporation into construction documents
Responsible Party	WETA
Estimated Completion Date	Prior to submittal of City Building Permit
Mitigation Measure BIO-1	
Resource Affected	**Salmonids and Sensitive Aquatic Species**
Description	*BIO-1. Minimize Impacts to Salmonids and Sensitive Aquatic Species during Construction:* Incorporate the following into the construction documents: • Construction in Mare Island Strait will be limited to the period from August 1 to October 15 to avoid the migration period for salmonids and other special-status species. • Conservation measures and terms and conditions listed in the 2012 NMFS Biological Opinion, 2014 USFWS Biological Opinion, and the 2014 Amended CDFW Streambed Alteration Agreement.
Anticipated Benefit	Minimize impacts to biological resources, specifically to salmonids and sensitive aquatic species.
How it Will Be Implemented	Incorporation into construction documents
Criteria for Evaluating	Verify incorporation into construction documents
Responsible Party	WETA
Estimated Completion Date	Prior to submittal of City Building Permit

Table 7-1
Summary Table of NEPA Mitigation Measures (Continued)

Mitigation Measure CR-1	
Resource Affected	**Historic Properties, Prehistoric Archaeological Materials, and Human Remains**
Description	*CR-1: Ensure that the final project design is in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and the Mare Island Historic District Design Guidelines.*
Anticipated Benefit	Promote compatible design of facility with Mare Island Historic District
How it Will Be Implemented	Submittal of plans for review by City Planning Department
Criteria for Evaluating	Approval of plans by City Planning Department
Responsible Party	WETA
Estimated Completion Date	Upon receipt of City Planning Permits
Mitigation Measure CR-2	
Resource Affected	**Historic Properties, Prehistoric Archaeological Materials, and Human Remains**
Description	*CR-2: If historic features or prehistoric archaeological materials are encountered during project construction on the non-Navy-owned landside portion of the project, the procedures outlined in the Archaeological Treatment Plan for Mare Island (PAR Environmental Services, 2000b) shall be followed.*
Anticipated Benefit	Appropriate treatment of any inadvertent discoveries
How it Will Be Implemented	Incorporation into bid advertisement documents
Criteria for Evaluating	Verify incorporation into construction documents
Responsible Party	WETA
Estimated Completion Date	Prior to submittal of City Building Permit

Table 7-1
Summary Table of NEPA Mitigation Measures (Continued)

Mitigation Measure CR-3	
Resource Affected	**Historic Properties, Prehistoric Archaeological Materials, and Human Remains**
Description	*CR-3: If human remains are encountered during construction activities on the non-Navy-owned landside portion of the project, there would be no further excavation or disturbance of the remains, or of the nearby area until the Solano County Coroner has made the necessary findings as to origin, in accordance with Health and Safety Code 7050.5. In accordance with Public Resources Code 5097.98, if the coroner believes the human remains to be those of a Native American, he or she would contact, by telephone, within 24 hours, the Native American Heritage Commission. The Native American Heritage Commission would immediately notify the most likely descendant (MLD). The MLD would inspect the site of the discovery, and may recommend the means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD would complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The remains would not be damaged or disturbed by further development until the County has discussed and conferred with the MLD regarding their recommendations.*
Anticipated Benefit	Appropriate treatment of any inadvertent discoveries
How it Will Be Implemented	Incorporation into bid advertisement documents
Criteria for Evaluating	Verify incorporation into construction documents
Responsible Party	WETA
Estimated Completion Date	Prior to submittal of City Building Permit
Mitigation Measure CR-4	
Resource Affected	**Historic Properties, Prehistoric Archaeological Materials, and Human Remains**
Description	*CR-4: In the unlikely event that historic properties, prehistoric archaeological materials, or human remains are encountered during construction in Navy-owned submerged lands, WETA shall stop work, secure the site, and immediately contact the City and the Navy. The Navy will include this requirement as a condition in the Navy submerged land lease.*
Anticipated Benefit	Appropriate treatment of any inadvertent discoveries
How it Will Be Implemented	Incorporation into bid advertisement documents
Criteria for Evaluating	Verify incorporation into construction documents
Responsible Party	WETA
Estimated Completion Date	Prior to submittal of City Building Permit

Table 7-1
Summary Table of NEPA Mitigation Measures (Continued)

Mitigation Measure HZ-1	
Resource Affected	**Hazards**
Description of	*Mitigation Measure HZ-1: Compliance with Navy Lease Agreement* The Lessee would conduct construction and operation of the maintenance facility, and implementation of the mitigation plan, in accordance with all applicable Federal, State, and local laws and regulations, including the following: • The Lessee will work with the Navy and the applicable regulatory agencies to comply with all restrictions related to construction and operation of the proposed maintenance facility and the implementation of mitigation. • Any necessary notifications or restrictions relating to any existing hazardous substances in the submerged lands will be included in the Navy lease agreement. • The lease will require the Lessee to submit a work plan to the Navy, the California DTSC, and the RWQCB for review and comment prior to engaging in any sediment disturbance activities, and will require that the Lessee stop all work and notify the Navy immediately if previously unknown contamination such as, but without limitation, buried debris, stained sediment, unusual odors, or MPPEH is discovered during sediment-disturbing activity
Anticipated Benefit	Minimize potential hazards during implementation
How it Will Be Implemented	Incorporation into bid advertisement documents
Criteria for Evaluating	Verify incorporation into construction documents
Responsible Party	Lessee/WETA
Estimated Completion Date	Prior to submittal of City Building Permit

Acronyms:
CDFW = California Department of Fish and Wildlife
MLD = most likely descendant
MPPEH = Material Potentially Presenting an Explosive Hazard
NEPA = National Environmental Policy Act
NMFS = National Marine Fisheries Service
USFWS = U.S. Fish and Wildlife Service
WETA = San Francisco Bay Area Water Emergency Transportation Authority

8.0 AGENCIES AND PERSONS CONSULTED

Numerous agencies, organizations, and entities were contacted during the preparation of this EA and associated permitting activities. These stakeholders, as well as other potential interested parties, were provided a copy of the NOA. The NOA was sent to:

- Bay Area Air Quality Management District;
- BCDC;
- Cal-EPA;
- California DTSC;
- California Native American Heritage Commission;
- CDFW – Bay Delta Region 3;
- City;
- Corps – San Francisco District;
- Cortina Band of Indians;
- Cortina Wintun Environmental Protection Agency;
- LMI;
- NMFS;
- RWQCB;
- Solano County Historical Society;
- Solano Resource Conservation District;
- USCG Sector San Francisco;
- U.S. EPA Region 9;
- USFWS California Nevada Region 8;
- Vallejo Sanitation and Flood Control District; and
- Yocha Dehe Wintun Nation.

9.0 LIST OF PREPARERS

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10.0 REFERENCES

Purpose and Need for the Proposed Action

City of Vallejo, 2008. Mare Island Specific Plan. Amended June.

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