

Draft 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

August 2014



**Lease of Submerged Lands at Mare Island to Enable the Construction and Operation of a Ferry
Maintenance Facility, Vallejo, California
August 2014**

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: Draft Environmental Assessment

ABSTRACT

This Draft 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.

This EA evaluates two action alternatives and the No Action Alternative. For additional information concerning this document, or to send comments, please contact:

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**United States Department of the Navy
Naval Facilities Engineering Command
Base Realignment and Closure Program Management Office West
August 2014**

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- Appendix B Cultural Resources Correspondence
- Appendix C Vallejo Ferry Maintenance Facility Project Mitigation Monitoring and Reporting Program
- Appendix D Record of Non-Applicability for the Clean Air Act

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 ₂ e	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 Draft 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 Draft 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 square feet instead of 13,700 square feet) 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; 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 Draft 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 Draft 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 101-510 (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 Draft 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 Draft 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



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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.

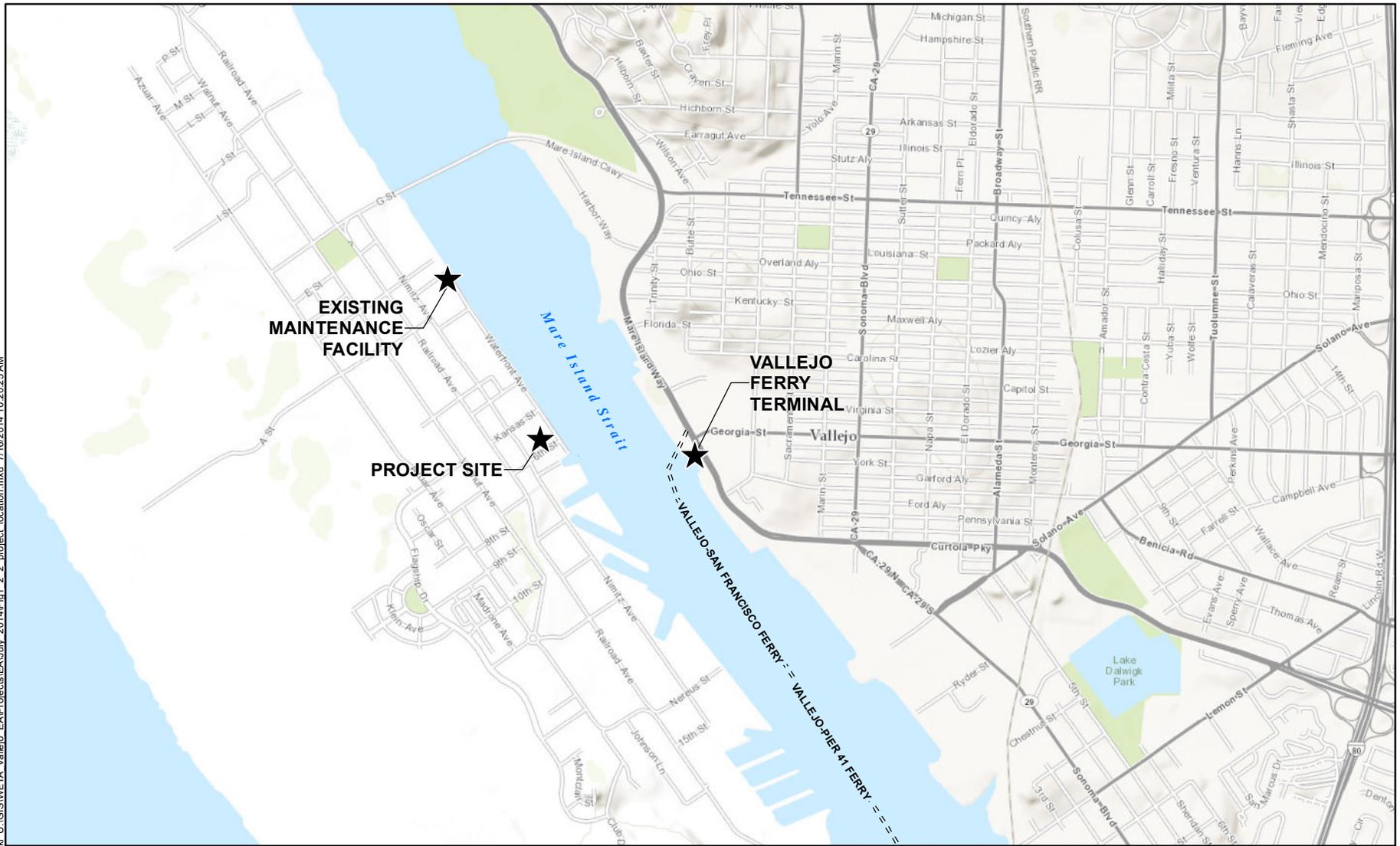


REGIONAL LOCATION

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 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, GH0, 2012.



PROJECT LOCATION

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Vallejo Ferry Maintenance Facility EA
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 has released this Draft EA for a minimum 15-day public review and comment period.

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*; 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 are encouraged to review and comment on the Draft EA during the public review period. Copies of the Draft EA are 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.

The public's comments on the Draft EA, as well as feedback from applicable resource and permitting agencies, will be responded to in writing as part of the Final EA, and considered by the Navy in evaluating the project's alternatives and environmental impacts before a final decision is made.

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 Draft 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 Draft 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.

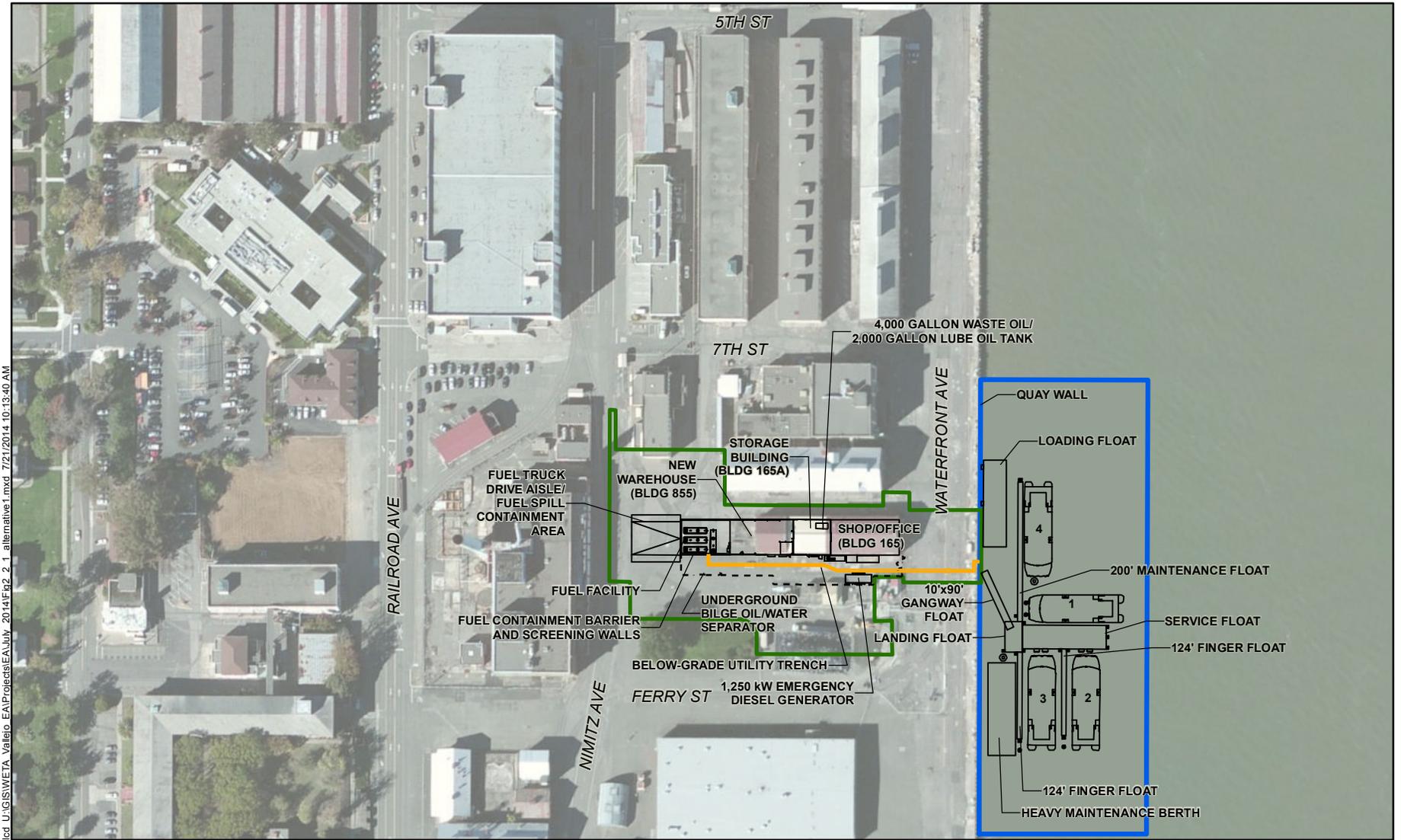
Waterside Improvements

The waterside improvements would cover approximately 13,700 square feet of water surface. This total would include approximately 7,800 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 Draft 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

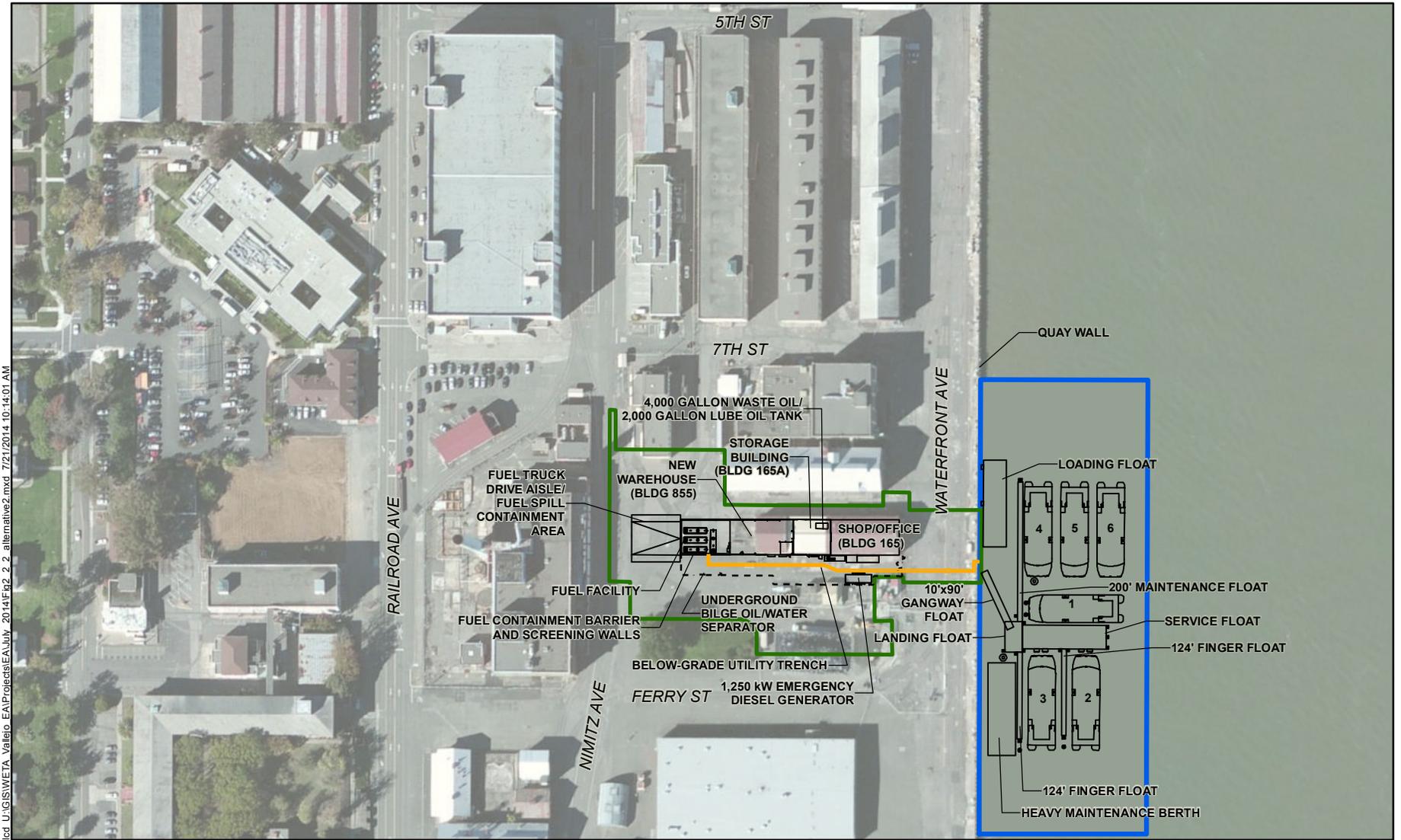


ALTERNATIVE 1

Vallejo Ferry Maintenance Facility EA
Vallejo, California

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FIGURE 2.2.1



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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



ALTERNATIVE 2

Vallejo Ferry Maintenance Facility EA
Vallejo, California

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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):

California Department of Fish and Wildlife (CDFW) – Streambed Alteration Agreement (June 2014 amendment)

- In-channel work will be confined to the approved work window¹ (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.
- Provide pre- and post-project photographs of the project site.

¹ 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.

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 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 2, 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 Draft 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 Draft 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 Draft 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 [PM₁₀] 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; PM₁₀ = 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

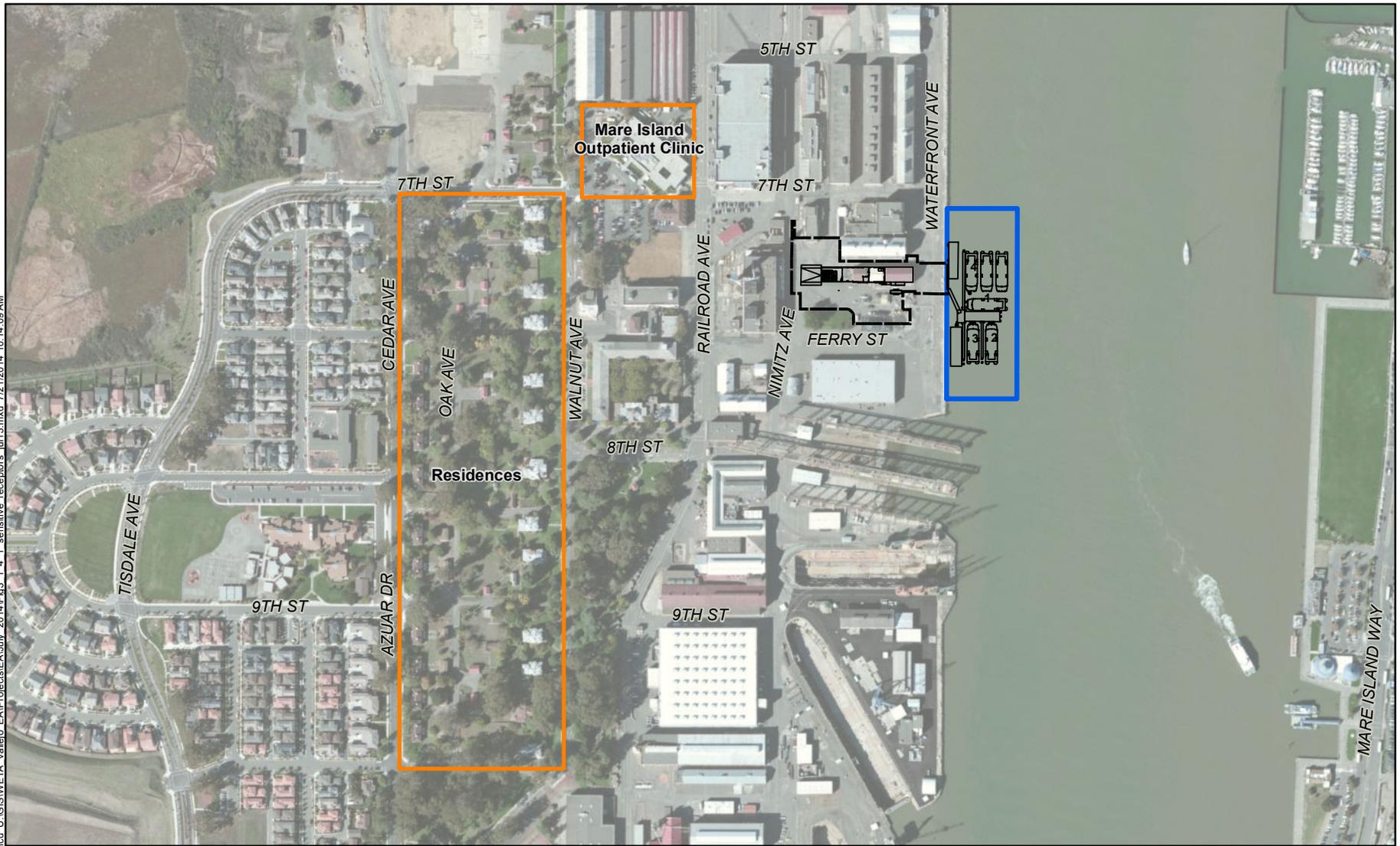
CZMA (USC Sections 3501 et seq., as amended in 1990 under the Coastal Zone Act Reauthorization Amendments), administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources and balances economic 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).

loc: U:\GIS\WETA_Vallejo_EA\Projects\EA\July_2014\Fig3_1_4_1_sensitive_receptors_jul13.mxd 7/21/2014 10:14:09 AM



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



NOISE-SENSITIVE RECEPTORS

Vallejo Ferry Maintenance Facility EA
Vallejo, California

August 2014

FIGURE 3.1.4.1

8/7/14 vasa/hk...T:\WETA Vallejo\Fig3.1.5.1_view_promenade_aug14.ai



VIEW OF MARE ISLAND STRAIT SHORELINE

August 2014

Vallejo Ferry Maintenance Facility EA
Vallejo, California

FIGURE 3.1.5.1

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	<i>Acipenser tediostrostrus</i>	FT	Yes	May be present year-round in Mare Island Strait
Delta smelt	<i>Hypomesus transpacificus</i>	FT	No	May be present in Mare Island Strait during periods of high discharge from the Delta
Chinook salmon, Sacramento River winter-run ESU	<i>Oncorhynchus tshawytscha</i>	FE	Yes	May be present in Mare Island Strait during periods of migration
Chinook salmon, Central Valley spring-run ESU	<i>Oncorhynchus tshawytscha</i>	FT	No	May be present in Mare Island Strait during periods of migration
Steelhead, Central California Coast DPS	<i>Oncorhynchus mykiss</i>	FT	Yes	May be present in Mare Island Strait during periods of migration
Steelhead, Central Valley DPS	<i>Oncorhynchus mykiss</i>	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	<i>Engraulis mordax</i>	J, A
	Pacific sardine	<i>Sardinops sagax</i>	J, A
Pacific Groundfish	English sole	<i>Parophrys vetulus</i>	J, A
	Sand sole	<i>Psettichthys melanostictus</i>	L, J, A
	Starry flounder	<i>Platichthys stellatus</i>	J, A
	Lingcod	<i>Ophiodon elongates</i>	J, A
	Brown rockfish	<i>Sebastes auriculatus</i>	J
	Pacific whiting (hake)	<i>Merluccius productus</i>	E,L
	Leopard shark	<i>Triakis semifasciata</i>	J, A
	Spiny dogfish	<i>Squalus acanthias</i>	J, A
	Skates	<i>Raja</i> spp.	J, A
	Cabazon	<i>Scorpaenichthys marmoratus</i>	J
Pacific Coast Salmon	Chinook salmon	<i>Oncorhynchus tshawytscha</i>	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 Asis) 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 Draft 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

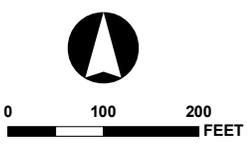
Although the lease area is not in a designated National Priorities List Superfund site (U.S. EPA, 2013), the Navy continues CERCLA investigation in the lease area and adjacent submerged lands. The lease area is in the Navy's CERCLA Investigation Area (IA) K – Cells 28 and 29 in the Mare Island Strait. 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



MARE ISLAND HISTORIC DISTRICT

Vallejo Ferry Maintenance Facility EA
Vallejo, California

August 2014

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 Draft 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 square feet of water surface, which would include approximately 7,800 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 square feet instead of 13,700 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), PM₁₀, 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 Rate¹ 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; PM₁₀ = 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 (CO₂e) 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 Levels¹ (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:

L_v = 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).

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). 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 square feet of estuarine habitat, which would include approximately 7,800 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 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 choker 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 CO₂e 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 CO₂e 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 Alternative) 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	<p><i>GEO-1: Design Level Geotechnical Investigation:</i> 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:</p> <ul style="list-style-type: none"> • 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	<p><i>BIO-1. Minimize Impacts to Salmonids and Sensitive Aquatic Species during Construction:</i> Incorporate the following into the construction documents:</p> <ul style="list-style-type: none"> • 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	<i>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.</i>
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	<i>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.</i>
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	<i>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.</i>
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	<i>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.</i>
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	<p><i>Mitigation Measure HZ-1: Compliance with Navy Lease Agreement</i></p> <p>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:</p> <ul style="list-style-type: none"> • 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.

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Appendix A

Biological Reports and Permit Documents: Wetland Delineation, Species List, Biological Opinions, WETA North Bay Ferry Maintenance Facility Mitigation Monitoring Plan (December 2013), Bay Conservation and Development Commission Permit (June 2014), and Streambed Alteration Agreement (Amended June 2014)

**PRELIMINARY DELINEATION OF SECTION 10 RIVERS
AND HARBORS ACT NAVIGABLE WATERS OF THE
UNITED STATES FOR THE FERRY MAINTENANCE
FACILITY, VALLEJO, SOLANO COUNTY, CALIFORNIA**

PREPARED FOR:

WINZLER & KELLY
495 TESCONI CIRCLE
SANTA ROSA, CA 95401
PHONE: 707-523-1010

PREPARED BY:

JANE VALERIUS ENVIRONMENTAL CONSULTING
152 WEEKS WAY
SEBASTOPOL, CA 95472
CONTACT: JANE VALERIUS
707- 824-4327

APRIL 2010

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SECTION 2 - DESCRIPTION OF SITE CHARACTERISTICS	Page 2
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APPENDIX A SITE PHOTOS

APPENDIX B HIGH WATER MARK INFORMATION AND WETLAND DELINEATION MAP

SECTION 1 - INTRODUCTION AND BACKGROUND INFORMATION

This wetland delineation report has been conducted on behalf of the City of Vallejo who is the project proponent or applicant. The wetland delineation report presents findings based on a delineation of potential U.S. Army Corps of Engineers (USACE) waters of the U.S., including wetlands, for the proposed Ferry Maintenance Facility Project located on Mare Island across from the Vallejo Ferry Terminal. The project is located on the southeast side of Mare Island on Waterfront Street between 7th Street and Kansas Street (Figure 1 – Project Area map and Figure 2 – USGS Quad map with project study boundary). Site photographs from the delineation are provided in Appendix A.

The project is located on Mare Island Strait which is a tidally influence traditional navigable water of the U.S. and falls under Section 10 of the Rivers and Harbors Act. The USACE San Francisco District guidance document for Information Requested for Verification of Corps Jurisdiction revised November 2007 was used to determine the jurisdictional area for this project. A site visit was conducted on April 2, 2010 at 11:00 am. The site visit was timed to occur when the tide was low to allow for viewing any potential adjacent wetlands or vegetated areas.

The client contact for this report is:

	City of Vallejo
	Baylink
Contact:	Marty Robbins, General Manager
Address:	Building 477
	Waterfront Avenue
	Mare Island
	Vallejo, CA 94592
Phone:	(707) 562-3140

SECTION 2 - DESCRIPTION OF SITE CHARACTERISTICS

General Description

This project entails the development of a new ferry maintenance facility (Facility) for the Vallejo-Baylink Ferry system, owned by the City of Vallejo and operated by the Blue & Gold Fleet. The system consists of a fleet of four vessels that serve routes between the Vallejo Ferry Terminal and the City of San Francisco's Ferry Plaza and Fisherman's Wharf.

The Facility would be located on Mare Island across from the Vallejo Ferry Terminal. This project would replace an existing maintenance facility located upstream from the Project site. Refer to Figure 1 for the location of the existing and proposed maintenance facilities.

The waterfront facility improvements would consist of new berths for the Vallejo-Baylink vessels. The Facility would include berths for the four existing vessels and would accommodate a future expansion for an additional six to eight vessels (for a total of 10 to 12 berths) through a

modular design/construction approach. The berths would be constructed with floating docks and guide piles. A large maintenance float would be required to allow for work on two of the vessels. Most berths would have utility connections including fuel, potable water, sewage disposal, shore power, urea, compressed air, and hose bibs.

Other elements of the waterfront facility would include lighting, power, a tool shed, ship's store shed, diver access platform, access rampway, security systems, communications systems, and a jib crane. (The jib crane has already been purchased and installed on the service float which is tied to the quay wall at the existing maintenance facility. The service float would be relocated to the new facility, as part of Phase 2, and secured by piles).

Topography

The site is completely developed except for the open water portion of Mare Island Strait. The project site includes buildings from the former Mare Island Naval Shipyard. The portion of the project within USACE jurisdictional area is within Mare Island Strait which is a navigable water of the U.S. The bottom of Mare Island Strait towards the middle of the channel appears to be at -35 NGVD-29. According to the engineering cross sections for the project, the mean high water (MHW) is +3.42 feet NGVD-29 at building 165. The high tide line (HTL) is +6.87 feet. At this location the top of the quay wall is at +9.63 feet NGVD-29 and the mud line is at -5.0 feet ±. Therefore, both the MHW and HTL fall at the quay wall.

Hydrology

The project includes the already developed former Mare Island Shipyard. There are no natural areas within the shipyard at this location. The project extends into Mare Island Strait which is a navigable water. The Napa River flows into Mare Island Strait which then flows into San Pablo Bay.

Soils and Vegetation

There are no natural areas within the project site. Using the USDA Natural Resources Conservation Service (NRCS) on-line web soil survey Mare Island Strait is mapped as water and the developed areas are mapped as "made land". There is also no vegetation either within the channel or in the developed areas other than a few small patches of weedy vegetation growing in between the concrete areas.

SECTION 3 – METHODS

A site visit was conducted on April 2, 2010 at 11:00 am by Jane Valerius, wetland specialist. The site visit was timed to be on a day when the tide was low to allow for viewing any potential adjacent wetlands or vegetated areas. Although it was not possible to see the bottom of the channel the water was at the low tide level and no vegetation was visible or expected to occur. The water in the channel adjacent to the quay wall was murky from suspended sediment.

Sediment was likely coming from the Napa River upstream of the site and turbulence near the wall caused the sediment to be suspended in the water column. Photographs of the channel at low tide are provided in Appendix A.

Mare Island Strait is a tidally influenced traditional navigable water of the U.S. and falls under Section 10 of the Rivers and Harbors Act. The USACE San Francisco District guidance document for *Information Requested for Verification of Corps Jurisdiction* revised November 2007 was used to determine the jurisdictional area for this project. Based on this guidance, Section 10 jurisdiction for tidal areas is based on the Mean High Water (MHW) and the High Tide Line (HTL). Mean High Water (MHW) is defined as the extent of the line on the shore reached by the plane of the mean (average) high water established by survey with reference to available tidal datum, preferably averaged over a period of 18.6 years. High Tide Line (HTL) is defined as the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency. Elevations for MHW and HTL are based on NGVD-29 datum.

SECTION 4 – RESULTS

The portion of the project within USACE jurisdictional area is within Mare Island Strait which is a navigable water of the U.S. The bottom of Mare Island Strait towards the middle of the channel appears to be at -35 NGVD-29. According to the engineering cross sections for the project, the mean high water (MHW) is +3.42 feet NGVD-29 at building 165. At this location the wharf is at +9.63 feet NGVD-29. The high tide line (HTL) is +6.87 feet. At this location the top of the quay wall is at +9.63 feet NGVD-29 and the mud line is at -5.0 feet ±. Therefore, both the MHW and HTL fall at the quay wall. This information is indicated in Appendix B.

Based on this information the total jurisdictional area for the project site within the MHW and HTL is 3.1 acres.

SECTION 5 – REFERENCES CITED

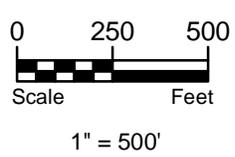
U.S. Army Corps of Engineers, San Francisco District. 2007. Information Requested for Verification of Corps Jurisdiction. November. Regulatory Program. San Francisco, CA. <http://www.spn.usace.army.mil/regulatory/JD/Info%20Req.pdf>.

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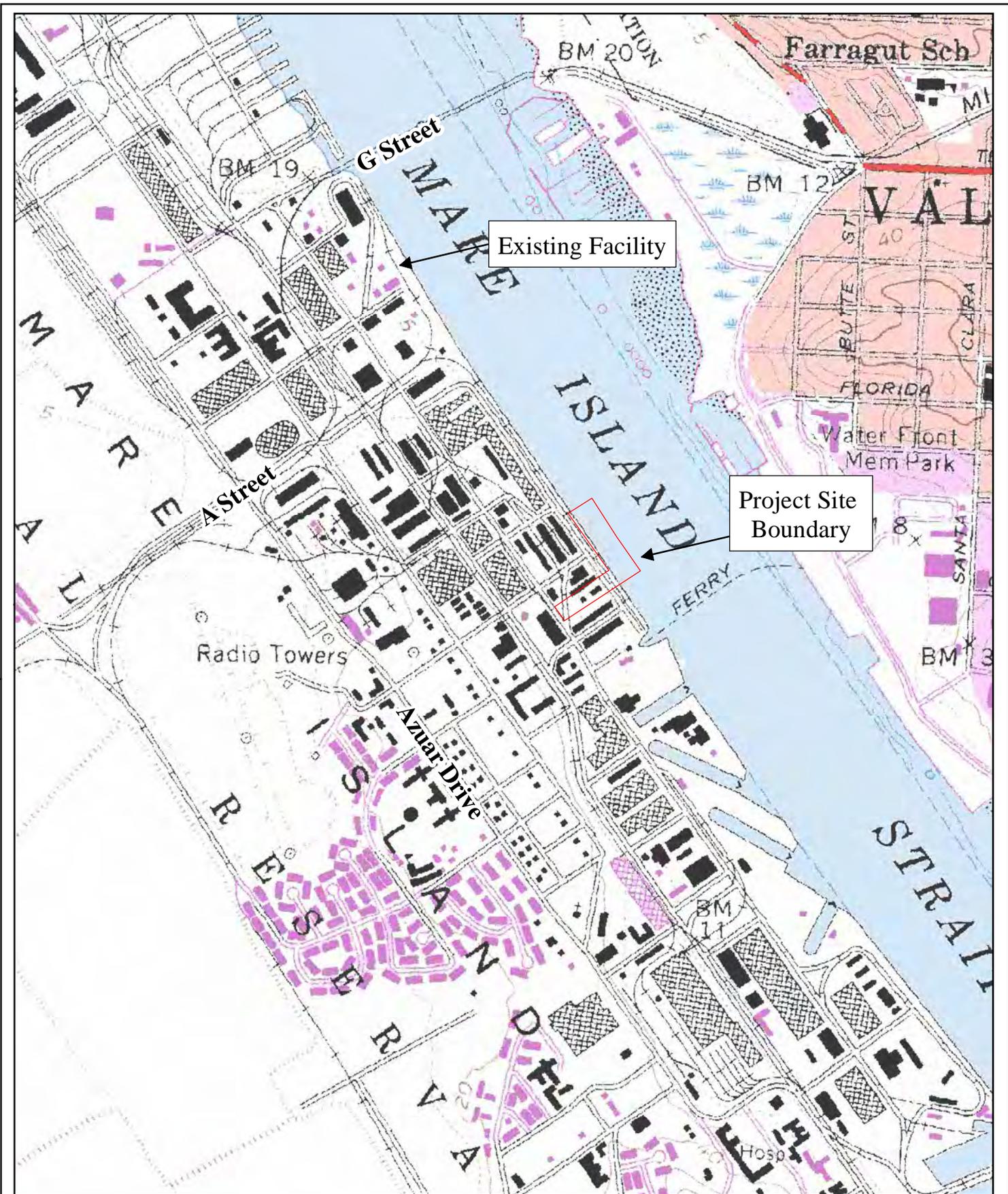
Legend

Project Site Boundary



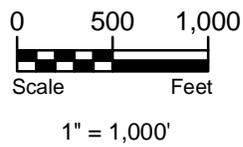
Project Area
Vallejo Ferry Maintenance Project

Figure 1



Legend

 Project Site Boundary



USGS Mare Island Quad Map

Vallejo Ferry Maintenance Project

Figure 2

APPENDIX A SITE PHOTOS

**PROPOSED FERRY MAINTENANCE FACILITY
PHOTOS TAKEN ON APRIL 2, 2010**



Photo 1: Low tide at project site.



Photo 2: Art Ship at low tide in project area.



Photo 3. Looking westerly along quay wall within proposed project area.

APPENDIX B HIGH WATER MARK INFORMATION
AND WETLAND DELINEATION MAP

VALLEJO MAINTENANCE FACILITY

DATUM COMPARISON

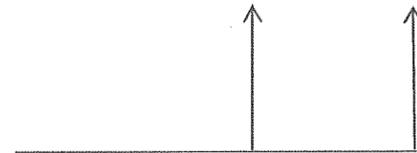
3/3/2010 ART ANDERSON ASSOCIATES

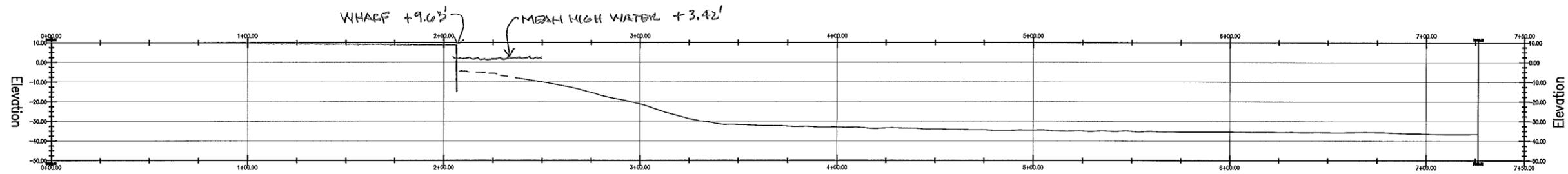
TIDAL DATA (year)	2060	2010	2060	2010
	MLLW w/BCDC <u>Increase*</u>	MLLW w/o BCDC <u>Increase*</u>	NGVD-29 w/BCDC <u>Increase*</u>	NGVD-29 w/o BCDC <u>Increase*</u>
Extreme High Water (EHW)	10.70'	9.37'	8.20'	6.87'
Mean Higher High Water (MHHW)	7.25'	5.92'	4.75'	3.42'
Mean Sea Level (MSL)	4.48'	3.15'	1.98'	0.65'
Mean Lower Low Water (MLLW)	1.33'	0.00'	-1.17'	-2.50'
Extreme Low Water (ELW)*	-2.70'	-2.70'	-5.20'	-5.20'
Top of Quay Wall (Survey Pt #256)	12.13'	12.13'	9.63'	9.63'
Mudline @ Quay (centerline Bldg #165)	-2.50+/-	-2.50+/-	-5.00+/-	-5.00+/-

Per CHE Report (4/15/06) datum differential is 2.50'
(NGVD-29 is 2.50' less than MLLW)

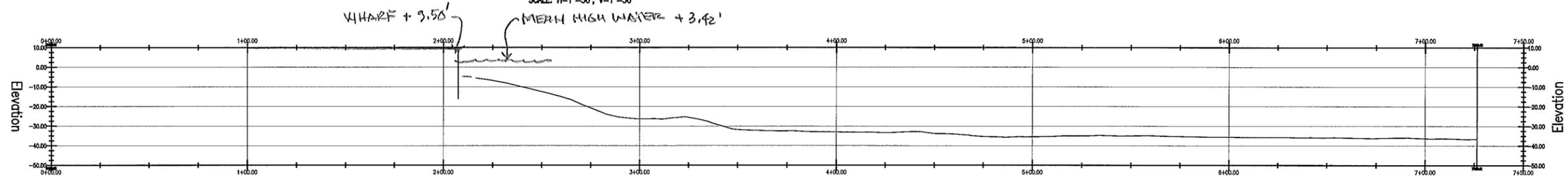
The site plan for the project uses NGVD-29 as the datum.

*BCDC sea level rise factor of 16" is not applied to ELW

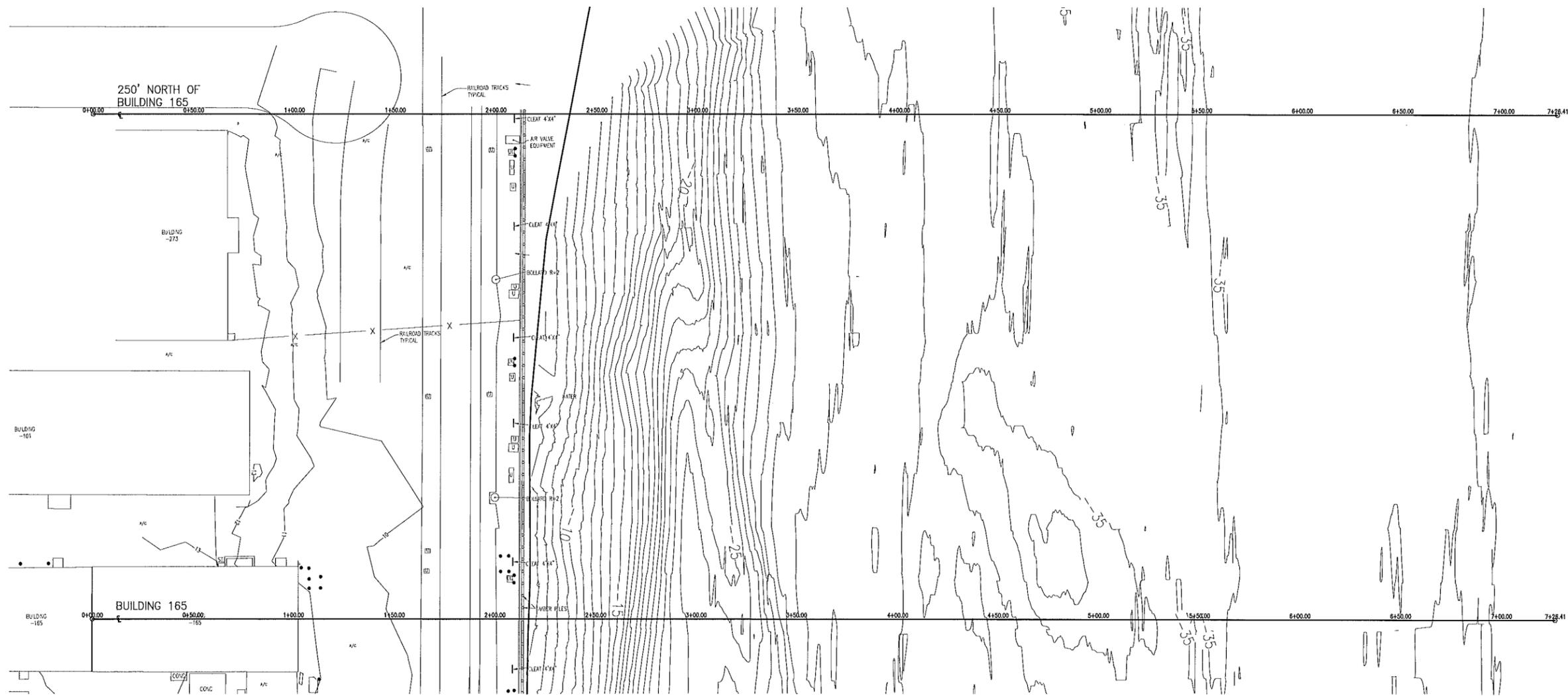




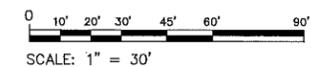
BUILDING 165 (250 FT NORTH) PROFILE
SCALE: H=1"=30', V=1"=30'



BUILDING 165 CENTERLINE PROFILE
SCALE: H=1"=30', V=1"=30'



EXISTING SITE PLAN
SCALE: 1"=30' DATUM = NGVD-29



CONSULTANT
WINZLER & KELLY
CONSULTING ENGINEERS
417 Montgomery Street, Suite 600, San Francisco, CA 94104-1115
tel 415.283.4970 • fax 415.283.4980 • www.w-and-k.com

ART ANDERSON
ASSOCIATES
202 PACIFIC AVE. BREWERTON, WA 98337
(360) 479-5600 FAX 479-5605

**CITY OF VALLEJO
BAYLINK FERRY SYSTEM
MAINTENANCE FACILITY**

SEAL AND SIGNATURE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET TITLE
**PROFILES
EXISTING SITE PLAN**

ISSUANCE

SCALE
AS SHOWN
DRAWN BY
K. HUESMANN
CHECKED BY
G. YORK
PROJECT NO
FWWIN010
DATE
03MAR10

SHEET NUMBER



1 SITE PLAN
1"=50'

DRAWING NAME: D:\Projects\14\14050101_Vallejo_Ferry_System\DWG\Wetland\USACE.dwg DATE: Apr 30, 2010 2:28pm PLOTTED BY: MJB/ghr



VALLEJO - BAYLINK FERRY SYSTEM
WETLAND DELINEATION MAP

EX-2

30 APRIL 2010



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

OCT 28 2010

Regulatory Division

SUBJECT: File Number 2006-302430

Martin Robbins
Baylink Ferry
PO Box 2287
Vallejo, California 94592-2287

Dear Mr. Robins:

This letter is in response to your submittal of April 21, 2010, requesting confirmation of the extent of Corps of Engineers jurisdiction at Building 165 on Waterfront Ave, Mare Island, City of Vallejo, Contra Costa County, California.

Enclosed is a map labeled "Baylink-Vallejo Ferry Maint. Facility," dated October 21, 2010, showing the extent and location of Corps of Engineers jurisdiction. We have based this jurisdictional delineation on the current conditions on the site as verified during a site visit performed by our staff on April 28, 2010. A change in those conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. However, if there has been a change in circumstances that affects the extent of Corps jurisdiction, a revision may be completed before that date.

All proposed work and/or structures extending bayward or seaward of the line on shore reached by: (1) mean high water (MHW) in tidal waters, or (2) ordinary high water in non-tidal waters designated as navigable waters of the United States, must be authorized by the Corps of Engineers pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. Section 403). Additionally, all work and structures proposed in unfilled portions of the interior of diked areas below former MHW must also be authorized under Section 10 of the same statute.

All proposed discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands.

Your proposed activity is within our jurisdiction and a permit will be required for your project. Application for Corps authorization can be made to this office using the application form available on our website: <http://www.spn.usace.army.mil/regulatory/apply.html>. To avoid delays it is essential that you enter the file number at the top of this letter into Item No. 1 of the application. The application must include plans showing the location, extent and character of the proposed activity, prepared in accordance with the requirements contained in this pamphlet. You

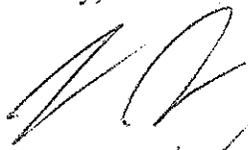
should note, in planning your project, that upon receipt of a properly completed application and plans, it may be necessary to advertise the proposed work by issuing a Public Notice for a period of 30 days.

Our Nationwide Permits and Regional General Permits have already been issued to authorize certain activities provided specified conditions are met. Your completed application will enable us to confirm that your activity is already authorized. You are advised to refrain from starting your proposed activity until we make a determination that the project is covered by an existing permit. Commencement of work before you receive our notification will be interpreted as a violation of our regulations.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

Should you have any questions regarding this matter, please contact Ian Liffmann of our Regulatory Division by phone at (415) 503-6769, or by email at ian.liffmann@usace.army.mil. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,



Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copy Furnished:

CA RWQCB, Oakland, CA
CA SWRCB, Sacramento, CA
Winzler & Kelly Consulting Engineers; Attn: Kristine Gaspar

United States Department of the Interior



FISH AND WILDLIFE SERVICE



**Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825**

January 18, 2013

Document Number: 130118110011

David Pecora
URS Corp.
1333 Broadway, Suite 800
Oakland, CA 94612

Subject: Species List for WETA Vallejo Maintenance Facilities Project

Dear: Mr. Pecora

We are sending this official species list in response to your January 18, 2013 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 18, 2013.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found [here](#).

Endangered Species Division



U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 130118110011

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- *Branchinecta conservatio*
 - Conservancy fairy shrimp (E)
- *Branchinecta lynchi*
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- *Desmocerus californicus dimorphus*
 - valley elderberry longhorn beetle (T)
- *Elaphrus viridis*
 - delta green ground beetle (T)
- *Speyeria callippe callippe*
 - callippe silverspot butterfly (E)
- *Syncaris pacifica*
 - California freshwater shrimp (E)

Fish

- *Acipenser medirostris*
 - green sturgeon (T) (NMFS)
- *Eucyclogobius newberryi*

- tidewater goby (E)
- *Hypomesus transpacificus*
 - Critical habitat, delta smelt (X)
 - delta smelt (T)
- *Oncorhynchus kisutch*
 - coho salmon - central CA coast (E) (NMFS)
- *Oncorhynchus mykiss*
 - Central California Coastal steelhead (T) (NMFS)
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central California coastal steelhead (X) (NMFS)
 - Critical habitat, Central Valley steelhead (X) (NMFS)
- *Oncorhynchus tshawytscha*
 - Central Valley spring-run chinook salmon (T) (NMFS)
 - Critical habitat, winter-run chinook salmon (X) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
 - California tiger salamander, central population (T)
- *Rana draytonii*
 - California red-legged frog (T)
 - Critical habitat, California red-legged frog (X)

Reptiles

- *Masticophis lateralis euryxanthus*
 - Alameda whipsnake [=striped racer] (T)
 - Critical habitat, Alameda whipsnake (X)
- *Thamnophis gigas*
 - giant garter snake (T)

Birds

- *Charadrius alexandrinus nivosus*
 - western snowy plover (T)
- *Pelecanus occidentalis californicus*
 - California brown pelican (E)
- *Rallus longirostris obsoletus*

- California clapper rail (E)
- *Sternula antillarum* (= *Sterna*, = *albifrons*) *browni*
 - California least tern (E)
- *Strix occidentalis caurina*
 - northern spotted owl (T)

Mammals

- *Reithrodontomys raviventris*
 - salt marsh harvest mouse (E)

Plants

- *Cordylanthus mollis ssp. mollis*
 - soft bird's-beak (E)
- *Lasthenia conjugens*
 - Contra Costa goldfields (E)
 - Critical habitat, Contra Costa goldfields (X)
- *Trifolium amoenum*
 - showy Indian clover (E)

Proposed Species

Plants

- *Cordylanthus mollis ssp. mollis*
 - Critical habitat, soft bird's-beak (PX)

Quads Containing Listed, Proposed or Candidate Species:

BENICIA (482C)

VINE HILL (482D)

CUTTINGS WHARF (483A)

MARE ISLAND (483D)

NAPA (500D)

No county species lists requested.

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 18, 2013.



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Accipiter cooperii</i> Cooper's hawk	ABNKC12040	None	None	G5	S3	WL
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	None	G2G3	S2	SSC
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Astragalus tener var. tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S2	SSC
<i>Atriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<i>Blepharizonia plumosa</i> big tarplant	PDAST1C011	None	None	G1	S1	1B.1
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S2S3	
<i>Buteo regalis</i> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S2	
<i>Calasellus californicus</i> An isopod	ICMAL34010	None	None	G2	S2	
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
<i>Centromadia parryi ssp. congdonii</i> Congdon's tarplant	PDAST4R0P1	None	None	G4T2	S2	1B.2
<i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened	None	G4T3	S2	SSC
<i>Chloropyron molle ssp. molle</i> soft bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
<i>Cicuta maculata var. bolanderi</i> Bolander's water-hemlock	PDAP10M051	None	None	G5T3T4	S2	2.1
<i>Circus cyaneus</i> northern harrier	ABNKC11010	None	None	G5	S3	SSC
<i>Coastal Brackish Marsh</i> Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
<i>Danaus plexippus</i> monarch butterfly	IILEPP2010	None	None	G5	S3	



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Dirca occidentalis</i> western leatherwood	PDTHY03010	None	None	G2G3	S2S3	1B.2
<i>Downingia pusilla</i> dwarf downingia	PDCAM060C0	None	None	G2	S2	2.2
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3	FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G2	S2	1B.2
<i>Falco peregrinus anatum</i> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T3	S2	FP
<i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T2	S2	SSC
<i>Helianthella castanea</i> Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
<i>Helminthoglypta nickliniana bridgesi</i> Bridges' coast range shoulderband	IMGASC2362	None	None	G2T1	S1	
<i>Hydroprogne caspia</i> Caspian tern	ABNNM08020	None	None	G5	S4	
<i>Hypomesus transpacificus</i> Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
<i>Isocoma arguta</i> Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
<i>Juglans hindsii</i> Northern California black walnut	PDJUG02040	None	None	G1	S1	1B.1
<i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Lateralus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G4T1	S1	FP
<i>Lathyrus jepsonii var. jepsonii</i> Delta tule pea	PDFAB250D2	None	None	G5T2	S2.2	1B.2
<i>Legenere limosa</i> legenere	PDCAM0C010	None	None	G2	S2.2	1B.1
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	PDPLM09140	None	None	G2	S2	1B.2
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
<i>Limosella australis</i> Delta mudwort	PDSCR10050	None	None	G4G5	S2	2.1



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G3	S2S3	
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
<i>Melospiza melodia maxillaris</i> Suisun song sparrow	ABPBXA301K	None	None	G5T2	S2	SSC
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	ABPBXA301W	None	None	G5T2?	S2?	SSC
<i>Northern Coastal Salt Marsh</i> Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
<i>Northern Vernal Pool</i> Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
<i>Nyctinomops macrotis</i> big free-tailed bat	AMACD04020	None	None	G5	S2	SSC
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2Q	S2	
<i>Pandion haliaetus</i> osprey	ABNKC01010	None	None	G5	S3	WL
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	AFCJB34020	None	None	G2	S2	SSC
<i>Polygonum marinense</i> Marin knotweed	PDPGN0L1C0	None	None	G1Q	S1.1	3.1
<i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	None	G3	S2S3	SSC
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G4T2T3	S2S3	SSC
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2S3	
<i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060	None	None	G3?	S1.2	2.2
<i>Sorex ornatus sinuosus</i> Suisun shrew	AMABA01103	None	None	G5T1	S1	SSC
<i>Symphotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Syncaris pacifica</i> California freshwater shrimp	ICMAL27010	Endangered	Endangered	G1	S1	
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S4	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Trichostema ruygtii</i> Napa bluecurls	PDLAM220H0	None	None	G2	S2	1B.2
<i>Trifolium amoenum</i> showy rancheria clover	PDFAB40040	Endangered	None	G1	S1	1B.1
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	ABPBXB3010	None	None	G5	S3S4	SSC

Record Count: 67



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southwest Region

501 West Ocean Boulevard, Suite 4200

Long Beach, California 90802-4213

April 10, 2012

In response, reply to:
2011/00766

Lieutenant Colonel Torrey A. DiCiro
U.S. Department of the Army
San Francisco District Corps of Engineers
1455 Market Street, 16th Floor
San Francisco, California 94103-1398

Dear Colonel DiCiro:

Thank you for your letter of March 3, 2011, requesting consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531 *et seq.*), and the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act for the proposed Vallejo-Baylink Ferry Maintenance Facility Project (Corps File No. 2006-302430). The United States Army Corps of Engineers (Corps) proposes to authorize the City of Vallejo (City) to construct a ferry maintenance dock on the Mare Island Strait in Vallejo, Solano County, California pursuant to Section 404 of the Clean Water Act (33 U.S.C. § 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403).

The enclosed biological opinion is based on our review of the proposed project and describes NMFS' analysis of potential effects to threatened Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*), threatened Central Valley (CV) steelhead (*O. mykiss*), threatened CV spring-run Chinook salmon (*O. tshawytscha*), endangered Sacramento River winter-run Chinook salmon (*O. tshawytscha*), threatened southern distinct population segment (DPS) of North American green sturgeon (*Acipenser medirostris*), and designated critical habitat for green sturgeon, CCC steelhead, and winter-run Chinook salmon in accordance with section 7 of the ESA. NMFS' conclusion in the biological opinion is that the project is not likely to jeopardize the continued existence of these listed salmonid species or green sturgeon, or adversely modify designated critical habitat. However, NMFS anticipates take of green sturgeon as a result of the project. An incidental take statement with non-discretionary terms and conditions is included with the enclosed biological opinion.

Regarding EFH, NMFS evaluated the potential effects of this project and determined that the project may adversely affect EFH, but the potential impacts are minimal. NMFS had no EFH conservation recommendations for this project. This determination regarding EFH was provided by electronic mail message from Maureen Goff of NMFS to Ian Liffmann of the Corps on January 18, 2012.



If you have any questions regarding this consultation, please contact Gary Stern at (707) 575-6060 or Gary.Stern@noaa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Rodney R. McInnis", written in a cursive style.

Rodney R. McInnis
Regional Administrator

Enclosure

cc: Chris Yates, NMFS Long Beach, CA
Ian Liffmann, Corps San Francisco, CA
Copy to File ARN #151422SWR2011SR00147

BIOLOGICAL OPINION

ACTION AGENCY: U.S. Army Corps of Engineers, San Francisco District

ACTION: Vallejo-Baylink Ferry Maintenance Facility Project in Mare Island Strait in the City of Vallejo, California

CONSULTATION CONDUCTED BY: National Marine Fisheries Service, Southwest Region

FILE NUMBER: 2011/00766

DATE ISSUED: __04/10/2012__

I. CONSULTATION HISTORY

By letter dated March 3, 2011, the U.S. Army Corps of Engineers (Corps) requested initiation of informal section 7 consultation with NOAA's National Marine Fisheries Service (NMFS) regarding the City of Vallejo's proposed construction of a new ferry maintenance facility located in the Mare Island Strait. The Corps' initiation of consultation request included a Joint Aquatic Resource Permit Application (JARPA), and supporting documents, prepared by the applicant's consultants, Winzler & Kelly GHD, dated February 2, 2011. The Corps' letter presented their finding that the proposed project was not likely to adversely affect listed salmonids and green sturgeon.

By email message on June 1, 2011, the applicant's consultant, Winzler & Kelly, provided NMFS with additional information pertaining to the proposed project. The email message included five documents: (1) a pile driving noise impacts analysis; (2) the waterfront improvement's pile plan; (3) the Initial Study/Subsequent Mitigated Negative Declaration for California Environmental Quality Act, dated February 1, 2011; (4) an updated fill quantities spreadsheet; and (5) a proposed mitigation plan.

On September 29, 2011, Winzler & Kelly provided NMFS by email message two additional documents: (1) a California Department of Fish and Game Streambed Alteration Agreement dated August 9, 2011; and (2) a draft Hydroacoustic Monitoring Plan dated August 2011.

On October 19, 2011, NMFS hosted a meeting with representatives from California Department of Fish and Game (CDFG), the Corps, San Francisco Bay Regional Water Quality Control Board, Winzler & Kelley, and the City of Vallejo. During the meeting, NMFS requested additional information for assessment of potential project impacts to listed species. California's guidelines for implementing the Clean Marinas Program were also discussed. NMFS and the Corps agreed that the consultation should proceed as formal, because the project's pile driving

activities would likely have adverse effects to listed species under the jurisdiction of NMFS. The Corps' letter of March 3, 2011, to NMFS included a provisional request to initiate formal consultation if additional information became available that would lead to determination of adverse effects. Winzler & Kelly prepared meeting notes, which were reviewed by the meeting participants and finalized on November 2, 2011.

By email message on November 14, 2011, Winzler & Kelly provided NMFS and the Corps with an updated project description and information requested at the October 19, 2011, meeting. Representatives from NMFS and Winzler & Kelly discussed the updated project description by telephone on November 30, 2011. On December 4, 2011, the final project description was distributed by Winzler & Kelly to the Corps and NMFS.

Representatives from Winzler & Kelly contacted NMFS and the Corps on February 8, 2012, regarding potential changes to the project. A funding shortfall may require the City to scale back the size of the project, but the specific changes to the project had not yet been determined. Thus, the proposed project should be considered the full project and there is a potential for the size of some project features to be smaller if additional funds are not available.

II. DESCRIPTION OF THE PROPOSED ACTION

The Corps proposes to issue a permit (Corps File No. 2006-302430) to the City of Vallejo to replace an existing ferry maintenance facility on Mare Island under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403) and Section 404 of the Clean Water Act (33 U.S.C. § 1344). The new facility will provide for crewing, repairs, fueling, maintenance, vessel moorage, and storage functions of the existing Vallejo-Baylink Ferry system. It would be located approximately half a mile downstream from the existing maintenance facility, adjacent to the intersection of Waterfront Avenue and Ferry Street in the City of Vallejo, Solano County, California (Figure 1). Construction of the new maintenance facility is likely to take approximately one year. The in-water components of the project are anticipated to take 2 to 3 months for construction and would be limited to the period between July 1 and October 30 during one year. The applicant initially planned for construction of the new facility in 2012, but current funding issues may delay construction to 2013 or 2014. NMFS does not anticipate any interdependent or interrelated actions associated with the proposed action.

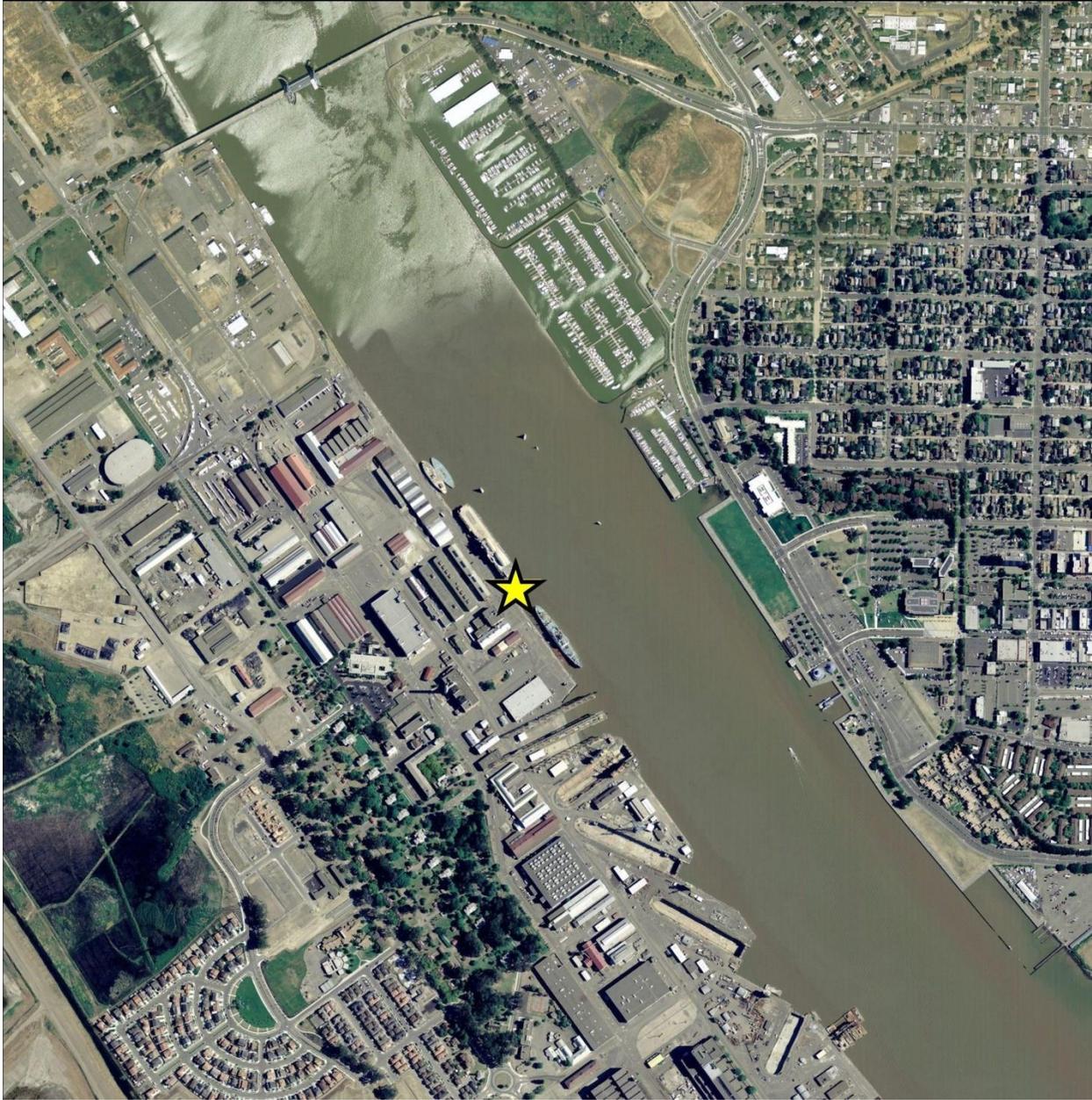


Figure 1. Location of new Vallejo-Baylink Ferry Maintenance Facility on Mare Island and within Mare Island Strait.

A. Description of Project Elements and Construction Activities

The Vallejo-Baylink Ferry is owned by the City of Vallejo and operated by the Blue & Gold Fleet. The Ferry system consists of a fleet of four vessels that serve routes between the Vallejo Ferry Terminal and the City of San Francisco’s Ferry Plaza and Fisherman’s Wharf. The project description presented below was obtained from the following documents:

- (1) JARPA for the Vallejo-Baylink Ferry Maintenance Facility, February 1, 2011;
- (2) Initial Study/Subsequent Mitigated Negative Declaration for the Vallejo-Baylink Ferry Maintenance Facility. California Environmental Quality Act, February 1, 2011;
- (3) California Department of Fish and Game Streambed Alteration Agreement for the Vallejo-Baylink Ferry Maintenance Facility, August 9, 2011;
- (4) Hydroacoustic Monitoring Plan for the Vallejo-Baylink Ferry Maintenance Facility, August 2011; and
- (5) Materials provided by Winzler & Kelly to NMFS and the Corps in November and December 2011.

The full project is presented below. However, funding shortfalls may require the City to scale back the size of some project facilities if additional funds are not available.

1. Inland Project Elements.

The project's inland components include relocation of administration offices, installation of fencing and security system, utility improvements, installation of a fueling facility, construction of a 4,500 square-foot warehouse to be used for storage and a mechanic shop, and placement of a 1250 kW emergency generator to be housed in a sound enclosure. The proposed fueling system will expand the current system capacity by improving the diesel fuel transfer rate. The new maintenance facility would include the following storage facilities: (1) 48,000 gallons of diesel stored in four new 12,000 gallon above-ground tanks that will be located in below-grade vaults; (2) 2,000 gallons of clean lube oil that will be stored in an existing double-walled concrete tank with leak detection and relocated from the existing facility; (3) 4,000 gallons of oily bilge water to be stored in new tanks located in below-grade vaults; (4) 4,000 gallons of dirty lube oil that will be stored in an existing double-walled concrete tank with leak detection and relocated from the existing facility; and (5) 6,000 gallons of urea stored in an existing steel tank and relocated from existing facility.

2. In-water Project Elements:

The proposed ferry maintenance facility would include four new full-service berths (two maintenance and two mooring-only) for ferry boats. The berths will be composed of floating docks, fixed in position with guide piles and fender piles. All berths will have utility connections including fuel, potable water, sewage disposal, shore power, urea, bilge water, waste oil, lube oil and compressed air. The new facility would include lighting, power, a tool shed, ship's store shed, diver access platform, access gangway, security systems, and communications systems.

Construction of the new docks and access gangway at the maintenance facility would cover approximately 11,000 square feet of Mare Island Strait. In addition, an existing 4,080 square-foot maintenance float will be moved from the old facility to the new facility and secured with guide piles. The new facility will be used for overnight moorage, daily fueling, and light maintenance. The new facility (excluding the gangway) will be located approximately 50 feet away from the shoreline in water depths ranging between -15 and -40 feet mean low low water (MLLW).

In order to install the new gangway and floating docks a total of 54 piles of various sizes and materials will need to be installed in the Mare Island Strait. Pile types and sizes are listed below. Table 1 presents impact hammer driving times and rock drilling times for each pile type. Pile installation is projected to occur for a total of 10 days within a three-week period between July 1 and October 30, and will be accomplished utilizing a vibratory or impact hammer (as specified below), and rock drilling.

- (1) *13-inch reinforced plastic piles* - Sixteen 13-inch plastic reinforced fender piles will be driven by a vibratory hammer into the Mare Island Strait to support the new floating docks.
- (2) *12-inch steel piles* - Three 12-inch steel piles will be installed to support the floating docks. During a work day, all three piles may be installed. Each pile will be driven for approximately 13 minutes. Installation for one pile will begin with 5 minutes of rock drilling and 8 minutes of impact hammering for 100 strikes using an APE Model D30-42 diesel hammer, producing approximately 91,088 ft-lbs maximum energy per blow, at a rate of 1.4 sec/blow average.
- (3) *24-inch steel piles* - Three 24-inch steel piles will be installed to support the floating docks. During a work day, all three piles may be installed. Each pile will be driven for approximately 35 minutes. Installation of one pile will begin with 10 minutes of rock drilling and 25 minutes of impact hammering for 300 strikes using an APE Model D30-42 diesel hammer, producing approximately 91,088 ft-lbs maximum energy per blow, at a rate of 1.4 sec/blow average.
- (4) *30-inch steel piles* - Two 30-inch steel piles will be installed to support the floating docks. During a work day, all two piles may be installed. Each pile will be driven for approximately 35 minutes. Installation of one pile will begin with 10 minutes of rock drilling and 25 minutes of impact hammering for 300 strikes using an APE Model D30-42 diesel hammer, producing approximately 91,088 ft-lbs maximum energy per blow, at a rate of 1.4 sec/blow average.
- (5) *36-inch steel piles* - Seventeen 36-inch steel piles will be installed to support the floating docks. During a work day, up to five piles may be installed. Each pile will be driven for approximately 57 minutes. Installation of one pile will begin with 15 minutes of rock drilling and 42 minutes of impact hammering for 500 strikes using an APE Model D62-42 diesel hammer, producing approximately 203,216 ft-lbs maximum energy per blow, at a rate of 1.4 sec/blow average.
- (6) *42-inch steel piles* - Thirteen 42-inch steel piles will be installed to support the floating docks. During a work day, up to five piles may be installed. Each pile will be driven for approximately 57 minutes. Installation of one pile will begin with 15 minutes of rock drilling and 42 minutes of impact hammering for 500 strikes using an APE Model D62-42 diesel hammer, producing approximately 203,216 ft-lbs maximum energy per blow, at a rate of 1.4 sec/blow average.

Table 1. Pile specific information regarding rock drilling and impact hammer driving times.

Pile type and size	Project total # of piles	Rock drill time per pile	Impact driving time per pile	# of piles per day	# of strikes per day	Total rock drill time per day	Total driving time per day
42-inch steel	13	15 minutes	42 minutes	5	2,500	75 minutes	3.5 hours
36-inch steel	17	15 minutes	42 minutes	5	2,500	75 minutes	3.5 hours
30-inch steel	2	10 minutes	25 minutes	2	600	20 minutes	50 minutes
24-inch steel	3	10 minutes	25 minutes	3	900	30 minutes	1.25 hours
12-inch steel	3	5 minutes	8 minutes	3	300	9 minutes	24 minutes
13-inch plastic	16	n/a	n/a - vibratory hammer	16	n/a	n/a	n/a

The applicant proposes to operate only a single impact hammer for construction of this project. Based on the size and type of piles, in combination with the use of a single impact hammer, the maximum amount of driving time by an impact hammer on a single day of construction will not exceed 3.5 hours.

3. Measures to Protect Listed Species and Critical Habitat

In an effort to minimize impacts to fish and critical habitat that may occur in the project area during in-water activities, the applicant proposes the following measures:

- All in-water work will occur between July 1 and October 30.
- 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 are not 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.
- The applicant will implement a NMFS-approved hydroacoustic monitoring plan. This plan will provide details on the sound attenuation system and the methods used to monitor and verify sound levels during pile driving activities. The sound monitoring results will be made available to NMFS.

- The applicant will prepare and implement an Industrial Storm Water Pollution Prevention Plan, which will specify material handling and storage, and specify measures to collect and convey storm water runoff. All underground tanks will be installed in water tight vaults and fuel tanks will be equipped with leak detection alarms.

In an effort to avoid and minimize impacts to fish that may occur during the inland construction and demolition activities, the applicant proposes to:

- 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 Department of Toxic Substances Control;
- manage accidental spills via the Accidental Spill and Discharge Response Plan prepared in accordance with the San Francisco Bay Regional Water Quality Control Board's Contingency Planning and Notification Requirements for Accidental Spills and Discharges;
- manage stormwater run-off via implementation of a Stormwater Pollution Prevention Program; and
- during ferry facility operation, the owner will implement an Industrial Stormwater Prevention Pollution Plan; and continue to operate in full accordance with the U.S. Environmental Protection Agency vessel general permit.

B. Description of the Action Area

The action area is defined as all areas affected directly or indirectly by the Federal action and not merely the immediate area involved (50 CFR 402.02). The proposed project is located in the City of Vallejo, Solano County, California, on Mare Island and within the Mare Island Strait. Approximate site coordinates are 38.101878 degrees north latitude and 122.269878 degrees west longitude (WGS 84). Mare Island Strait separates Mare Island from the mainland at Vallejo, California, and connects the Napa River with San Pablo Bay.

The action area includes both an upland area on Mare Island and an estuarine area in Mare Island Strait. The upland portion of the project will occur in an area of approximately 8,100 square feet on Mare Island adjacent to Waterfront Avenue, between 6th and 7th Avenues. The aquatic portion of the action area is within Mare Island Strait and extends a radial distance of 7,065 feet from the project site (Figure 2). This area contains the project's construction footprint and areas that may be affected by elevated sound (over 150 dB RMS re: 1 μ Pa during pile driving), increased levels of turbidity, and shading by the new floating docks and gangway.



Figure 2. Project action area (radial distance is 7,065 feet from construction site to include the extent of potential behavioral effects).

III. ANALYTICAL FRAMEWORK

A. Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which evaluates the range-wide conditions of the California Central Coast (CCC) steelhead distinct population segment (DPS), Central Valley (CV) steelhead DPS, CV spring-run Chinook salmon evolutionarily significant unit (ESU), Sacramento River winter-run Chinook salmon ESU, and southern DPS of North American green sturgeon, the factors responsible for that condition, and the species' likelihood of both survival and recovery; (2) the Environmental Baseline, which evaluates the condition of these listed species in the action area, the factors responsible for that condition, and the relationship of the action area to the likelihood of both survival and recovery of these listed species; (3) the Effects of the Action, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on these species in the action area; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on these species.

The jeopardy determination is made by adding the effects of the proposed Federal action and any Cumulative Effects to the Environmental Baseline and then determining if the resulting changes in species status in the action area are likely to cause an appreciable reduction in the likelihood of both the survival and recovery of these listed species in the wild.

The jeopardy analysis in this biological opinion places an emphasis on the range-wide likelihood of both survival and recovery of these listed species and the role of the action area in the survival and recovery of these listed species. The significance of the effects of the proposed Federal action is considered in this context, taken together with cumulative effects, for purposes of making the jeopardy determination. We use a hierarchical approach that focuses first on whether or not the effects on listed salmonids and green sturgeon in the action area will impact their respective populations. If the populations will be impacted, we assess whether this impact is likely to affect the ability of the populations to support the survival and recovery of the ESU and DPS.

B. Adverse Modification Determination

This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02, which was invalidated by the 9th Circuit Court of Appeals in 2004. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

The adverse modification analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which evaluates the range-wide condition of critical habitat for the CCC steelhead DPS, Sacramento River winter-run Chinook salmon ESU and the southern DPS of green sturgeon in terms of primary constituent elements (PCE), the factors responsible for that condition, and the intended conservation value of the critical habitat overall; (2) the Environmental Baseline, which evaluates the condition of critical habitat in the action area, the

factors responsible for that condition, and the conservation value of the critical habitat in the action area; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs in the action area and how that will influence the conservation value of affected critical habitat units; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the conservation value of affected critical habitat units.

For purposes of the adverse modification determination, we add the effects of the proposed Federal action on critical habitat in the action area, and any Cumulative Effects, to the Environmental Baseline and then determine if the resulting changes to the conservation value of critical habitat in the action area are likely to cause an appreciable reduction in the conservation value of critical habitat range-wide. If the proposed action will negatively affect PCEs of critical habitat (sites for spawning, rearing, and migration) in the action area we then assess whether or not this reduction will impact the value of the DPS or ESU critical habitat designation as a whole.

C. Use of Best Available Scientific and Commercial Information

To conduct the assessment, NMFS examined an extensive amount of information from a variety of sources. Detailed background information on the biology and status of the listed species and critical habitat has been published in a number of documents including peer reviewed scientific journals, primary reference materials, and governmental and non-governmental reports. Additional information regarding the effects of the project's actions on the listed species in question, their anticipated response to these actions, and the environmental consequences of the actions as a whole was formulated from the aforementioned resources, the project description and supporting documents for this project, and project meeting notes if applicable. For information that has been taken directly from published, citable documents, those citations have been referenced in the text and listed at the end of this document. A complete administrative record of this consultation is on file at the NMFS North Central Coast Office (Administrative Record Number 151422SWR2011SR00147).

IV. STATUS OF THE SPECIES AND CRITICAL HABITAT

This biological opinion analyzes the effects of the proposed Vallejo-Baylink Ferry Maintenance Facility Project on the following Federally-listed species (Distinct Population Segments [DPS] or Evolutionarily Significant Units [ESU]) and designated critical habitat:

Central California Coast steelhead (*Oncorhynchus mykiss*) DPS

Threatened (71 FR 834; January 5, 2006)

Critical habitat (70 FR 52488; September 2, 2005);

Central Valley steelhead (*O. mykiss*) DPS

Threatened (71 FR 834; January 5, 2006);

Central Valley Spring-run Chinook salmon (*O. tshawytscha*) ESU

Threatened (70 FR 37160; June 28, 2005);

Sacramento River Winter-run Chinook salmon (*O. tshawytscha*) ESU

Endangered (70 FR 37160; June 28, 2005)

Critical habitat (58 FR 33212; June 16, 1993); and

North American Green Sturgeon (*Acipenser medirostris*) southern DPS

Threatened (71 FR 17757; April 7, 2006)

Critical habitat (74 FR 52300; September 8, 2008).

Critical habitat for CV steelhead and CV spring-run Chinook salmon is not present in the action area.

A. Species Description, Life History, and Status

In this opinion, NMFS assesses four population viability parameters to help us understand the status of CCC steelhead, CV steelhead, CV spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, and southern DPS green sturgeon and their populations' ability to survive and recover. These population viability parameters are: abundance, population growth rate, spatial structure, and diversity (McElhany *et al.* 2000). NMFS has used existing information to determine the general condition of each population and factors responsible for the current status of each DPS or ESU.

We use these population viability parameters as surrogates for numbers, reproduction, and distribution, the criteria found within the regulatory definition of jeopardy (50 CFR 402.02). For example, the first three parameters are used as surrogates for numbers, reproduction, and distribution. We relate the fourth parameter, diversity, to all three regulatory criteria. Numbers, reproduction, and distribution are all affected when genetic or life history variability is lost or constrained. This results in reduced population resilience to environmental variation at local or landscape-level scales.

1. Steelhead

a. General Life History

Steelhead are anadromous forms of *O. mykiss*, spending some time in both freshwater and saltwater. Unlike Pacific salmon, steelhead are iteroparous, or capable of spawning more than once before death (Busby *et al.* 1996). Although one-time spawners are the great majority, Shapolov and Taft (1954) reported that repeat spawners are relatively numerous (17.2 percent) in California streams. Steelhead young usually rear in freshwater for 1 to 3 years before migrating to the ocean as smolts, but rearing periods of up to 7 years have been reported. Migration to the ocean usually occurs in the spring. Steelhead may remain in the ocean for 1 to 5 years (2 to 3 years is most common) before returning to their natal streams to spawn (Busby *et al.* 1996). The distribution of steelhead in the ocean is not well known. Coded wire tag recoveries indicate that most steelhead tend to migrate north and south along the continental shelf (Barnhart 1986). 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).

Fry typically emerge from the gravel 2 to 3 weeks after hatching (Barnhart 1986), and generally rear in edgewater habitats and move gradually into pools and riffles as they grow larger. Young steelhead feed on a wide variety of aquatic and terrestrial insects, and often defend territories in order to maintain access to food resources (Dianna 2004). Emerging fry are sometimes preyed upon by older juveniles. Cover is an important habitat component for fry and juvenile steelhead, both as a velocity refuge and as a means of avoiding predation (Meehan and Bjornn 1991). In winter, juvenile steelhead become less active and hide in available cover, including gravel or woody debris. However, during summer rearing steelhead tend to use riffles and other habitats not strongly associated with cover.

Suspended sediment concentrations, or turbidity, can influence the distribution, growth and survival to emergence of steelhead (Bell 1973, Sigler *et al.* 1984, Newcombe and Jensen 1996, Slaney *et al.* 1997). Bell (1973) found suspended sediment loads of less than 25 milligrams per liter (mg/L) were typically suitable for rearing juvenile steelhead. Water temperature also influences the growth and survival of *O. mykiss*. Temperature affects the rate at which eggs develop, the amount of food fry will require, and the amount of dissolved oxygen the water can hold. Water temperature also affects the metabolic rate, distribution, abundance, and swimming ability of rearing juvenile steelhead (Barnhart 1986, Bjornn and Reiser 1991, Myrick and Cech 2005). Rearing juvenile steelhead can reside in freshwater all year. Therefore, adequate flow and fluctuating diurnal water temperatures are important to the population at all times (Busby *et al.* 1996). Optimal temperatures for steelhead growth range between 50 and 68 degrees (°) Fahrenheit (F) (Hokanson *et al.* 1977, Wurtsbaugh and Davis 1977, Myrick and Cech 2005).

CCC and CV steelhead use San Francisco Bay as a migration corridor between their natal streams and the ocean. Adult steelhead migrate from the ocean to tributary streams from December through April. Juvenile steelhead downstream migration from their natal streams occurs episodically during fall, winter, and spring months. Steelhead smolts typically emigrate through San Francisco Bay during spring high flow events. Barnhart (1986) reported that steelhead smolts in California typically range in size from 5.5 to 8.3 inches (fork length). It is believed that the majority of juvenile steelhead transiting through the Bay migrate mainly within deeper areas of dredged ship channels opposed to the surrounding shallows (Klimley *et al.* 2009).

b. Status of CCC Steelhead DPS and Critical Habitat

Historically, approximately 70 populations¹ of steelhead existed in the CCC steelhead DPS (Spence *et al.* 2008). Many of these populations (about 37) were independent, or potentially independent, meaning they had a high likelihood of surviving for 100 years absent anthropogenic impacts (Bjorkstedt *et al.* 2005). The remaining populations were dependent upon immigration from nearby CCC steelhead DPS populations to ensure their viability (McElhaney *et al.* 2000, Bjorkstedt *et al.* 2005).

¹ Population as defined by Bjorkstedt *et al.* 2005 and McElhaney *et al.* 2000 as, in brief summary, a group of fish of the same species that spawns in a particular locality at a particular season and does not interbreed substantially with fish from any other group. Such fish groups may include more than one stream. These authors use this definition as a starting point from which they define four types of populations (not all of which are mentioned here).

While historical and present data on abundance are limited, CCC steelhead numbers are substantially reduced from historical levels. A total of 94,000 adult steelhead were estimated to spawn in the rivers of this DPS in the mid-1960s, including 50,000 fish in the Russian River - the largest population within the DPS (Busby *et al.* 1996). Recent estimates for the Russian River are on the order of 4,000 fish (NMFS 1997a). Abundance estimates for smaller coastal streams in the DPS indicate low but stable levels with recent estimates for several streams (Lagunitas, Waddell, Scott, San Vicente, Soquel, and Aptos creeks) of individual run sizes of 500 fish or less (62 FR 43937). Some loss of genetic diversity has been documented and attributed to previous among-basin transfers of stock and local hatchery production in interior populations in the Russian River (Bjorkstedt *et al.* 2005). Similar losses in genetic diversity in the Napa River may have resulted from out-of-basin and out-of-DPS releases of steelhead in the Napa River basin in the 1970s and 80s. These transfers included fish from the South Fork Eel River, San Lorenzo River, Mad River, Russian River, and the Sacramento River. In San Francisco Bay streams, reduced population sizes and fragmentation of habitat has likely also led to loss of genetic diversity in these populations. For more detailed information on trends in CCC steelhead abundance, see: Busby *et al.* 1996, NMFS 1997a, and Good *et al.* 2005, Spence *et al.* 2008.

CCC steelhead have experienced serious declines in abundance and long-term population trends suggest a negative growth rate. This indicates the DPS may not be viable in the long term. DPS populations that historically provided enough steelhead immigrants to support dependent populations may no longer be able to do so, placing dependent populations at increased risk of extirpation. However, because CCC steelhead remain present in most streams throughout the DPS, roughly approximating the known historical distribution, CCC steelhead likely possess a resilience that is likely to slow their decline relative to other salmonid DPS or ESUs in worse condition. A viability assessment of CCC steelhead concluded that populations in watersheds that drain to San Francisco Bay are highly unlikely to be viable, and that the limited information available did not indicate that any other CCC steelhead populations could be demonstrated to be viable² (Spence *et al.* 2008). Although there were average returns (based on the last 10 years of data) of adult CCC steelhead during 2007/08, research monitoring data from the 2008/09 and 2009/10 adult CCC steelhead returns indicate a decline in returning adults across their range compared to the last 10 years (Jeffrey Jahn, personal communication, 2011).

The most recent status update concludes that steelhead in the CCC steelhead DPS remain “likely to become endangered in the foreseeable future” (Williams *et al.* 2011), as new and additional information available since Good *et al.* (2005) does not appear to suggest a change in extinction risk. On August 15, 2011, NMFS chose to maintain the threatened status of the CCC steelhead (76 FR 50447).

The condition of CCC steelhead critical habitat, specifically its ability to provide for their conservation, has been degraded from conditions known to support viable salmonid populations. NMFS has determined that present depressed population conditions are, in part, the result of the following human-induced factors affecting critical habitat³: logging, agricultural and mining

² Viable populations have a high probability of long-term persistence (> 100 years).

³ Other factors, such as over fishing and artificial propagation have also contributed to the current population status of steelhead. All these human induced factors have exacerbated the adverse effects of natural factors such as

activities, urbanization, stream channelization, dams, wetland loss, and water withdrawals, including unscreened diversions for irrigation. Impacts of concern include alteration of streambank and channel morphology, alteration of water temperatures, loss of spawning and rearing habitat, fragmentation of habitat, loss of downstream recruitment of spawning gravels and large woody debris, degradation of water quality, removal of riparian vegetation resulting in increased streambank erosion, loss of shade (higher water temperatures) and loss of nutrient inputs (Busby *et al.* 1996, 70 FR 52488). Water development has drastically altered natural hydrologic cycles in many of the streams in the DPS. Alteration of flows results in migration delays, loss of suitable habitat due to dewatering and blockage; stranding of fish from rapid flow fluctuations; entrainment of juveniles into poorly screened or unscreened diversions, and increased water temperatures harmful to salmonids. Overall, current condition of CCC steelhead critical habitat is degraded, and does not provide the full extent of conservation value necessary for the recovery of the species.

c. Status of the CV Steelhead DPS

Central Valley steelhead historically were well-distributed throughout the Sacramento and San Joaquin rivers (Busby *et al.* 1996). Although it appears Central Valley steelhead remain widely distributed in Sacramento River tributaries, the vast majority of historical spawning areas are currently above impassable dams. At present, all Central Valley steelhead are considered winter-run steelhead (McEwan and Jackson 1996), although there are indications that summer steelhead were present in the Sacramento River system prior to the commencement of large-scale dam construction in the 1940s (IEP Steelhead Project Work Team 1999). McEwan and Jackson (1996) reported that wild steelhead stocks appear to be mostly confined to upper Sacramento River tributaries such as Antelope, Deer, and Mill creeks and the Yuba River. However, naturally spawning populations are also known to occur in Butte Creek, and the upper Sacramento mainstem, Feather, American, Mokelumne, and Stanislaus rivers (CALFED 2000). It is possible that other small populations of naturally spawning steelhead exist in Central Valley streams, but are undetected due to lack of sufficient monitoring and research programs; increases in fisheries monitoring efforts led to the discovery of steelhead populations in streams such as Auburn Ravine and Dry Creek (IEP Steelhead Project Work Team 1999).

Small self-sustaining populations of CV steelhead exist in the Stanislaus, Mokelumne, Calaveras, and other tributaries of the San Joaquin River (McEwan 2001). On the Stanislaus River, steelhead smolts have been captured in rotary screw traps at Caswell State Park and Oakdale each year since 1995 (Demko *et al.* 2000). Incidental catches and observations of steelhead juveniles also have occurred on the Tuolumne and Merced Rivers during fall-run Chinook salmon monitoring activities, indicating that steelhead are widespread, if not abundant, throughout accessible streams and rivers in the Central Valley (Good *et al.* 2005).

Steelhead counts at the Red Bluff Diversion Dam (RBDD) have declined from an average annual count of 11,187 adults for the ten-year period beginning in 1967, to an average annual count 2,202 adults in the 1990's (McEwan and Jackson 1996). Estimates of the adult steelhead population composition in the Sacramento River (natural origin versus hatchery origin) have also

drought and poor ocean conditions.

changed over this time period; through most of the 1950's, it was estimated that 88 percent of returning adults were of natural origin (Hallock *et al.* 1961), and this estimate declined to 10-30 percent in the 1990's (McEwan and Jackson 1996). Furthermore, the California Fish and Wildlife Plan estimated a total run size of about 40,000 adults for the entire Central Valley, including San Francisco Bay, in the early 1960s (CDFG 1965). In 1991-92, this run was probably less than 10,000 fish based on dam counts, hatchery returns and past spawning surveys (McEwan and Jackson 1996).

The status of Central Valley steelhead appears to have worsened since the 2005 status review (Good *et al.* 2005), when the biological review team concluded that the DPS was in danger of extinction. New information available since Good *et al.* (2005) indicates an increased extinction risk (Williams *et al.* 2011). Steelhead have been extirpated from most of their historical range in this region. Habitat concerns in this DPS focus on the widespread degradation, destruction, and blockage of freshwater habitat within the region, and water allocation problems. Widespread hatchery production of introduced steelhead within this DPS also raises concerns about the potential ecological interactions between introduced and native stocks. Because the Central Valley steelhead population has been fragmented into smaller isolated tributaries without any large source population, and the remaining habitat continues to be degraded by water diversions, the population remains at an elevated risk for future population declines. Based on this information, NMFS chose to maintain the threatened listing for this species (76 FR 50447), but recommends reviewing Central Valley steelhead status again in 2-3 years, (instead of the normal 5 years) if species numbers do not improve (NMFS 2011a).

2. Chinook Salmon

a. *General Life History*

Chinook salmon return to freshwater to spawn when they are 3 to 8 years old (Healy 1991). Runs are designated on the basis of adult migration timing; however, distinct runs also differ in the degree of maturation at the time of river entry, thermal regime and flow characteristics of their spawning site, and actual time of spawning (Myers *et al.* 1998). 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. For comparison, fall-run Chinook salmon enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas on the mainstem or lower tributaries of rivers, and spawn within a few days or weeks of freshwater entry (Healey 1991). Adult endangered Sacramento River winter-run Chinook salmon enter San Francisco Bay from November through June (Hallock and Fisher 1985), and delay spawning until spring or early summer. Adult threatened Central Valley spring-run Chinook salmon enter the Sacramento-San Joaquin Delta (Delta) beginning in January and enter natal streams from March to July (Myers *et al.* 1998). Central Valley spring-run Chinook salmon adults enter freshwater in the spring, hold over summer, and spawn in the fall. Central Valley spring-run Chinook salmon juveniles typically spend a year or more in freshwater before migrating toward the ocean. Adequate instream flows and cool water temperatures are more critical for the survival of Central Valley spring-run Chinook salmon due to over summering by adults and/or juveniles.

Sacramento River winter-run Chinook salmon spawn primarily from mid-April to mid-August,

peaking in May and June, in the Sacramento River reach between Keswick Dam and the Red Bluff Diversion Dam. Central Valley spring-run Chinook salmon typically spawn between September and October depending on water temperatures. Chinook salmon generally spawn in waters with moderate gradient and gravel and cobble substrates. Eggs are deposited within the gravel where incubation, hatching, and subsequent emergence take place. The upper preferred water temperature for spawning adult Chinook salmon is 55 °F (Chambers 1956) to 57 °F (Reiser and Bjornn 1979). The length of time required for eggs to develop and hatch is dependent on water temperature, and quite variable.

Sacramento River winter-run Chinook salmon fry begin to emerge from the gravel in late June to early July and continue through October (Fisher 1994). Juvenile winter-run Chinook salmon spend 4 to 7 months in freshwater prior to migrating to the ocean as smolts. Central Valley spring-run Chinook salmon fry emerge from November to March and spend about 3 to 15 months in freshwater prior to migrating towards the ocean (Keljson *et al.* 1981). Post-emergent fry seek out shallow, nearshore areas with slow current and good cover, and begin feeding on small terrestrial and aquatic insects and crustaceans. Chinook fry and parr may spend time rearing within riverine and/or estuarine habitats including natal tributaries, the Sacramento River, non-natal tributaries to the Sacramento River, and the Delta.

Within estuarine habitat, juvenile Chinook salmon movements are generally dictated by tidal cycles, following the rising tide into shallow water habitats from the deeper main channels, and returning to the main channels when the tide recedes (Levy and Northcote 1982; Levings 1982; Healey 1991). Juvenile Chinook salmon forage in shallow areas with protective cover, such as intertidal and subtidal mudflats, marshes, channels and sloughs (McDonald 1960, Dunford 1975). As juvenile Chinook salmon increase in length, they tend to school in the surface waters of the main and secondary channels and sloughs, following the tides into shallow water habitats to feed (Allen and Hassler 1986). Keljson *et al.* (1981) reported that juvenile Chinook salmon demonstrated a diel migration pattern, orienting themselves to nearshore cover and structure during the day, but moving into more open, offshore waters at night. The fish also distributed themselves vertically in relation to ambient light. Juvenile Sacramento River winter-run Chinook salmon migrate to the sea after only rearing in freshwater for 4 to 7 months, and occur in the Delta from October through early May (CDFG 1998). Most Central Valley spring-run Chinook salmon smolts are present in the Delta from mid-March through mid-May depending on flow conditions (CDFG 2000).

b. Status of the CV Spring-run Chinook Salmon

Historically, the predominant salmon run in the Central Valley was the spring-run Chinook salmon. Extensive construction of dams throughout the Sacramento-San Joaquin basin has reduced the Central Valley spring-run Chinook salmon run to only a small portion of its historical distribution. The Central Valley drainage as a whole is estimated to have supported Central Valley spring-run Chinook salmon runs as large as 600,000 fish between the late 1880s and 1940s (CDFG 1998). The ESU has been reduced to only three naturally-spawning populations that are free of hatchery influence from an estimated 17 historic populations.⁴ These three populations (spawning in three tributaries to the Sacramento River - Deer, Mill, and Butte

⁴There has also been a small run in Big Chico Creek in recent years (Good *et al.* 2005).

creeks), are in close geographic proximity, increasing the ESU's vulnerability to disease or catastrophic events.

Central Valley spring-run Chinook salmon from the Feather River Hatchery (FRH) were included in the ESU because they are believed by NMFS to be the only population in the ESU that displays early run timing. This early run timing is considered by NMFS to represent an important evolutionary legacy of the spring-run populations that once spawned above Oroville Dam (70 FR 37160). The FRH population is closely related genetically to the natural Feather River population. The FRH's goal is to release five million spring-run Chinook salmon per year. Recent releases have ranged from about one-and-a-half to five million fish, with most releases below five million fish (Good *et al.* 2005).

Several actions have been taken to improve habitat conditions for Central Valley spring-run Chinook salmon, including: habitat restoration efforts in the Central Valley; and changes in freshwater harvest management measures. Although protective measures likely have contributed to recent increases in Central Valley spring-run Chinook salmon abundance, the ESU is still well below levels observed from the 1960s. Threats from hatchery production (*i.e.*, competition for food between naturally-spawned and hatchery fish, run hybridization and genomic homogenization), climatic variation, high temperatures, predation, and water diversions still persist. Because wild Central Valley spring-run Chinook salmon ESU populations are confined to relatively few remaining watersheds and continue to display broad fluctuations in abundance, the Biological Review Team concluded that the ESU is likely to become endangered within the foreseeable future. The most recent status review concludes the status of Central Valley spring-run Chinook salmon ESU has probably deteriorated since the 2005 status review (Williams *et al.* 2011). New information available since Good *et al.* (2005) indicates an increased extinction risk. Based on this information, NMFS has chosen to maintain the threatened listing for this species (76 FR 50447), but recommends reviewing Central Valley spring-run Chinook status again in 2-3 years, (instead of the normal 5 years) if species numbers do not improve (NMFS 2011b).

c. Status of the Sacramento River Winter-Run Chinook Salmon and Critical Habitat

The Sacramento River winter-run Chinook salmon ESU has been completely displaced from its historical spawning habitat by the construction of Shasta and Keswick dams. Approximately, 300 miles of tributary spawning habitat in the upper Sacramento River is now inaccessible to the ESU. Most components of the Sacramento River winter-run Chinook salmon life history (*e.g.*, spawning, incubation, freshwater rearing) have been compromised by the habitat blockage in the upper Sacramento River. The remaining spawning habitat in the upper Sacramento River is artificially maintained by cool water releases from Shasta and Keswick Dams, and the spatial distribution of spawners is largely governed by the water year type and the ability of the Central Valley Project to manage water temperatures in the upper Sacramento River.

Between the time Shasta Dam was built and the Sacramento River winter-run Chinook salmon were listed as endangered, major impacts to the population occurred from warm water releases from Shasta Dam, juvenile and adult passage constraints at the RBDD, water exports in the southern Delta, and entrainment at a large number of unscreened or poorly-screened water

diversions. The naturally spawning component of this ESU has exhibited marked improvements in abundance and productivity in the 2000s (CDFG 2008). These increases in abundance are encouraging, relative to the years of critically low abundance of the 1980s and early 1990s; however, returns of several West Coast Chinook salmon and coho salmon stocks were lower than expected in 2007 (Southwest Fisheries Science Center 2008), and stocks remained low through 2009.

A captive broodstock artificial propagation program for Sacramento River winter-run Chinook salmon has operated since the early 1990s as part of recovery actions for this ESU. As many as 150,000 juvenile salmon have been released by this program, but in most cases the number of fish released was in the tens of thousands (Good *et al.* 2005). NMFS reviewed this hatchery program in 2004 and concluded that as much as 10 percent of the natural spawners may be attributable to the program's support of the population (69 FR 33102). The artificial propagation program has contributed to maintaining diversity through careful use of methods that ensure genetic diversity. If improvements in natural production continue, the artificial propagation program may be discontinued (69 FR 33102).

Critical habitat was designated for the Sacramento River winter-run Chinook salmon on June 16, 1993, and includes the waterside portion of the project's action area. Physical and biological features that are essential for the conservation of Sacramento winter-run Chinook salmon, based on the best available information, include: (1) access from the Pacific Ocean to appropriate spawning areas in the upper Sacramento River; (2) the availability of clean gravel for spawning substrate; (3) adequate river flows for successful spawning, incubation of eggs, fry development and emergence, and downstream transport of juveniles; (4) water temperatures between 42.5 and 57.5°F for successful spawning, egg incubation, and fry development; (5) habitat areas and adequate prey that are not contaminated; (6) riparian areas that provides for successful juvenile development and survival; and (7) access downstream so that juveniles can migrate from the spawning grounds to San Francisco Bay and the Pacific Ocean (58 FR 33212).

Designated critical habitat for Sacramento River winter-run Chinook salmon has been degraded from conditions known to support viable salmonid populations. It does not provide the full extent of conservation values necessary for the recovery of the species. In particular, adequate river flows and water temperatures have been impacted by human actions, substantially altering the historical river characteristics in which the Sacramento River winter-run Chinook salmon evolved. Depletion and storage of stream flows behind large dams on the Sacramento River and other tributary streams have drastically altered the natural hydrologic cycles of the Sacramento River and Delta. Alteration of flows results in migration delays, loss of suitable habitat due to dewatering and blockage; stranding of fish from rapid flow fluctuations; entrainment of juveniles into poorly screened or unscreened diversions, and increased water temperatures harmful to salmonids. Other impacts of concern include alteration of stream bank and channel morphology, loss of riparian vegetation, loss of spawning and rearing habitat, fragmentation of habitat, loss of downstream recruitment of spawning gravels, degradation of water quality, and loss of nutrient input.

Several actions have been taken to improve habitat conditions for Sacramento River winter-run Chinook salmon, including: changes in ocean and inland fishing harvest that to increase ocean

survival and adult escapement, and implementation of habitat restoration efforts throughout the Central Valley. However, this population remains below established recovery goals and the naturally-spawned component of the ESU is dependent on one extant population in the Sacramento River. There is particular concern about risks to the ESU's genetic diversity (genetic diversity is probably limited because there is only one remaining population) life-history variability, local adaptation, and spatial structure (Good *et al.* 2005, 70 FR 37160). The status of Sacramento River winter-run Chinook salmon is little changed since the last status review, and new information available since Good *et al.* (2005) does not appear to suggest a change in extinction risk (Williams *et al.* 2011). On August 15, 2011, NMFS reaffirmed no change to the listing of endangered for the Sacramento River winter-run Chinook salmon ESU (76 FR 50447).

3. Green Sturgeon

a. General Life History

Adult green sturgeon are believed to spawn every 3 to 5 years and generally exhibit fidelity to their spawning site. Green sturgeon reach sexual maturity only after several years of growth; first spawning generally occurs at 15 years of age for males, and 17 years for females. The southern DPS green sturgeon spawn in the deep turbulent sections of the upper reaches of the Sacramento River. CDFG (2002) report southern DPS green sturgeon spawning occurs above Hamilton City and possibly as far upstream as Keswick Dam. Incidental capture of post-larve green sturgeon occurs at RBDD and Glenn-Colusa Irrigation District (GCID). Israel (2006) estimated age of post-larvae green sturgeon captured at RBDD and GCID to establish post-larvae originated from spawning areas in the Sacramento River upstream of RBDD.

Adults typically begin their upstream spawning migrations into the San Francisco Bay by late February to early March, reach Knights Landing by April, and spawn between March and July (Heublein *et al.* 2009). Peak spawning is believed to occur between mid-April to mid-June. Green sturgeon in the Sacramento River can display two outmigration strategies. Monitoring data reveals that post-spawned green sturgeon can leave the Sacramento River prior to September 1, or remain in the river until the onset of winter flows (Heublein *et al.* 2009).

Adult female green sturgeon produce between 60,000 and 140,000 eggs, depending on body size, with a mean egg diameter of 0.17 inch (Moyle *et al.* 1992, Van Eenennaam *et al.* 2001). Eggs are likely broadcast spawned over large cobble substrate where they settle into the spaces between the cobbles, but substrate can range from clean sand to bedrock (USFWS 2002). Like salmonids, green sturgeon require cool water temperatures for egg and larval development, with optimal temperatures ranging from 54 to 62° F.

Juvenile green sturgeon spend from 1 to 3 years in freshwater before they enter the ocean (Nakamoto *et al.* 1995, Adams *et al.* 2002). Based on Klamath River age distribution work by Nakamoto *et al.* (1995), the majority of fish entering the ocean are between 8 and 24 inches in length which suggests they are 2 to 3 years of age. The low abundance of juveniles smaller than 8 inches in the Delta indicates juvenile southern DPS green sturgeon likely hold in the mainstem Sacramento River, as suggested by Kyndard *et al.* (2005). Laboratory studies, conducted by Allen and Cech, Jr. (2007), also indicated juveniles spend approximately the first 6 months in

fresh to brackish water and then transition into salt water at about 1.5 years of age. Once a juvenile green sturgeon has completed an initial entry into salt water, the term “sub-adult” is typically applied until the individual becomes sexually mature when the term “adult” is applied. During the late summer and early fall, sub-adults and nonspawning adult green sturgeon can be found aggregating in estuaries along the Pacific coast (Emmett *et al.* 1991, Moser and Lindley 2007). Particularly large concentrations of green sturgeon from both the northern and southern populations occur in the Columbia River estuary, Willapa Bay, Grays Harbor and Winchester Bay, with smaller aggregations in Humboldt Bay, Tillamook Bay, Nehalem Bay, and San Francisco and San Pablo Bays (Emmett *et al.* 1991, Moyle *et al.* 1992, and Beamesderfer *et al.* 2007).

Adult, sub-adult, and juvenile green sturgeon are benthic feeders (Moyle 2002). Adult green sturgeon are believed to feed primarily upon benthic invertebrates such as clams, mysid and grass shrimp, and amphipods (Radtke 1966, Adams *et al.* 2002), and to some extent on fish. Adults captured in the Delta are known to feed on invertebrates such as shrimp, mollusks, amphipods, and additionally upon small fish (Adams *et al.* 2002). Juvenile green sturgeon in the San Francisco Bay have been shown to feed on opossum shrimp (*Neomysis mercedie*) and amphipods (*Corophium spp.*) (Moyle 2002).

Kelly *et al.* (2007) studied the movement of six green sturgeon (one adult and five sub-adults) in the San Francisco Estuary (tagged in San Pablo Bay) and discovered while adults and sub-adults occupied shallow water depths, there were distinct directional movements. In contrast, when the fish exhibited non-directional movements, they remained close to the bottom. The movements were not found to be related to salinity, current, or temperature and the authors surmised they are related to food resource availability.

b. Status of Southern DPS Green Sturgeon and Critical Habitat

The southern DPS green sturgeon is considered vulnerable to catastrophic events due in part to a small estimated spawning population and drastic reductions in historically accessible spawning habitat. The precise population size of southern DPS green sturgeon is unknown, but it is likely to be much smaller than the northern DPS. Population abundance information concerning the southern DPS green sturgeon is described in the NMFS status reviews (Adams *et al.* 2002, NMFS 2005). Abundance information is limited, coming mainly from three sources: (1) incidental captures in the CDFG white sturgeon monitoring program; (2) fish monitoring efforts associated with RBDD and GCID on the upper Sacramento River; and (3) fish salvage operations at the water export facilities in the southern Delta. These data are insufficient in a variety of ways (short time series, non-target species, *etc.*) and do not support more than a qualitative evaluation of changes in green sturgeon abundance.

Some population abundance information comes from incidental captures of southern DPS green sturgeon from the white sturgeon monitoring program by the CDFG sturgeon tagging program (CDFG 2002). CDFG (2002) utilizes a multiple-census or Peterson mark-recapture method to estimate the legal population of white sturgeon captures in trammel nets. By comparing ratios of white sturgeon to green sturgeon captures, CDFG provides estimates of adult and sub-adult southern DPS green sturgeon abundance. Estimated abundance between 1954 and 2001 ranged

from 175 fish to more than 8,000 per year and averaged 1,509 fish per year. Unfortunately, there are many biases and errors associated with these data, and CDFG does not consider these estimates reliable. Incidental capture of post-larvae green sturgeon during salmonid monitoring efforts at the RBDD and GCID have ranged between 0 and 2,068 green sturgeon per year (Adams *et al.* 2002).

Green sturgeon salvage numbers are recorded at water export facilities operated by the California Department of Water Resources (DWR) and the Federal Bureau of Reclamation (BOR) in the Delta. Fish collection records have been maintained by DWR from 1968 to present and by BOR from 1980 to present. The average number of southern DPS green sturgeon taken per year at the DWR facility prior to 1986 was 732; from 1986 to 2001, the average per year was 47 (70 FR 17386). For the BOR facility, the average number prior to 1986 was 889; from 1986 to 2001 the average was 32 (70 FR 17386). Additional analysis of southern DPS green sturgeon indicates a downward trend in the number of green sturgeon per acre-foot of exported water at the DWR and BOR facilities since 1974 and 1983, respectively. Direct capture in salvage operations is a small component of the overall effect of water export facilities on southern DPS green sturgeon; entrained juvenile green sturgeon are exposed to potential high levels of predation by exotic predators, disruption in migratory behavior, and poor habitat quality. Delta water exports have increased substantially since the 1970's and it is likely that this has contributed to negative trends in the abundance of migratory fish that utilize the Delta, including the southern DPS green sturgeon. Catches of sub-adult and adult southern DPS green sturgeon by the Interagency Ecological Program between 1996 and 2004 ranged from 1 to 212 green sturgeon per year (212 occurred in 2001), however, the portion of these captures consisting of southern DPS green sturgeon is unknown as the fish were primarily captured in San Pablo Bay which is known to consist of a mixture of northern and southern DPS green sturgeon.

The most recent status review update concluded the southern DPS green sturgeon is likely to become endangered in the foreseeable future due to the substantial loss of spawning habitat, the concentration of a single spawning population in one section of the Sacramento River, and multiple other risks to the species such as stream flow management, degraded water quality, and introduced species (NMFS 2005). Based on this information, the southern DPS green sturgeon was listed as threatened on April 7, 2006 (71 FR 17757).

Critical habitat was designated for the southern DPS of green sturgeon on October 9, 2009 (74 FR 52300) and includes coastal United States marine waters within 60 fathoms depth from, and including, Monterey Bay, California, north to Cape Flattery, Washington, including the Strait of Juan de Fuca, Washington, to its United States boundary. The waterside portion of the project's action area is located within designated critical habitat for southern DPS green sturgeon. PCEs of designated critical habitat in the action area include adequate food resources and foraging habitat; the estuarine water column, which includes suitable depth, sediment, and water quality, and an unimpeded migratory corridor.

The current condition of critical habitat for the southern DPS of green sturgeon is degraded over its historical conditions. It does not provide the full extent of conservation values necessary for the recovery of the species, particularly in the upstream riverine habitat of the Sacramento River. In particular, passage and water flow PCEs have been impacted by human actions,

substantially altering the historical river characteristics in which the southern DPS of green sturgeon evolved. In addition, the alterations to the Delta may have a particularly strong impact on the survival and recruitment of juvenile green sturgeon due to their protracted rearing time in the Delta and San Francisco Estuary.

B. Factors Responsible for Steelhead, Chinook Salmon, and Green Sturgeon Stock Declines

NMFS cites many reasons (primarily anthropogenic) for the decline of steelhead (Busby *et al.* 1996), Chinook salmon (Myers *et al.* 1998), and southern DPS of green sturgeon (Adams *et al.* 2002, NMFS 2005). The foremost reason for the decline in these anadromous populations is the degradation and/or destruction of freshwater and estuarine habitat. Additional factors contributing to the decline of these populations include: commercial and recreational harvest, artificial propagation, natural stochastic events, marine mammal predation, and reduced marine-derived nutrient transport.

1. Habitat Degradation and Destruction

The best scientific information presently available demonstrates a multitude of factors, past and present, have contributed to the decline of west coast salmonids and green sturgeon by reducing and degrading habitat by adversely affecting essential habitat features. Most of this habitat loss and degradation has resulted from anthropogenic watershed disturbances caused by urban development, agriculture, poor water quality, water resource development, dams, gravel mining, forestry (Busby *et al.* 1996, Adams *et al.* 2002, Good *et al.* 2005), and lagoon management (Smith 1990, Bond 2006).

2. Commercial and Recreational Harvest

Until recently, commercial and recreational harvest of southern DPS green sturgeon was allowed under State and Federal law. The majority of these fisheries have been closed (NMFS 2005). Ocean salmon fisheries off California are managed to meet the conservation objectives for certain stocks of salmon listed in the Pacific Coast Salmon Fishery Management Plan, including any stock that is listed as threatened or endangered under the ESA. Early records did not contain quantitative data by species until the early 1950's. In addition, the confounding effects of habitat deterioration, drought, and poor ocean conditions on salmonids make it difficult to assess the degree to which recreational and commercial harvest have contributed to the overall decline of salmonids and green sturgeon in West Coast rivers.

3. Artificial Propagation

Releasing large numbers of hatchery fish can pose a threat to wild salmon and steelhead stocks through genetic impacts, competition for food and other resources, predation of hatchery fish on wild fish, and increased fishing pressure on wild stocks as a result of hatchery production (Waples 1991).

4. Natural Stochastic Events

Natural events such as droughts, landslides, floods, and other catastrophes have adversely affected salmonid and sturgeon populations throughout their evolutionary history. The effects of these events are exacerbated by anthropogenic changes to watersheds such as logging, roads, and water diversions. These anthropogenic changes have limited the ability of salmonid and sturgeon to rebound from natural stochastic events and depressed populations to critically low levels.

5. Marine Mammal Predation

Predation is not known to be a major factor contributing to the decline of West Coast salmon and steelhead populations relative to the effects of fishing, habitat degradation, and hatchery practices. Predation may have substantial impacts in localized areas. Harbor seal (*Phoca vitulina*) and California sea lion (*Zalophus californianus*) numbers have increased along the Pacific Coast (NMFS 1997b). However, at the mouth of the Russian River, Hanson (1993) reported that the foraging behavior of California sea lions and harbor seals with respect to anadromous salmonids was minimal, and predation on salmonids appeared to be coincidental with the salmonid migrations rather than dependent upon them.

6. Reduced Marine-Derived Nutrient Transport

Marine-derived nutrients from adult salmon carcasses have been shown to be vital for the growth of juvenile salmonids and the surrounding terrestrial and riverine ecosystems (Bilby *et al.* 1996, Bilby *et al.* 1998, Gresh *et al.* 2000). Declining salmon and steelhead populations have resulted in decreased marine-derived nutrient transport to many watersheds. Nutrient loss may be contributing to the further decline of ESA-listed salmonid populations (Gresh *et al.* 2000).

7. Ocean Conditions

Recent evidence suggests poor ocean conditions played a significant role in the low number of returning adult fall run Chinook salmon to the Sacramento River in 2007 and 2008 (Lindley *et al.* 2009). Changes in ocean conditions likely affect ocean survival of all west coast salmonid populations (Good *et al.* 2005, Spence *et al.* 2008).

C. Global Climate Change

Modeling of climate change impacts in California suggests average summer air temperatures are expected to increase (Lindley *et al.* 2007). Heat waves are expected to occur more often, and heat wave temperatures are likely to be higher (Hayhoe *et al.* 2004). Total precipitation in California may decline; critically dry years may increase (Lindley *et al.* 2007, Schneider 2007). The Sierra Nevada snow pack is likely to decrease by as much as 70 to 90 percent by the end of this century under the highest emission scenarios modeled (Luers *et al.* 2006). Wildfires are expected to increase in frequency and magnitude, by as much as 55 percent under the medium emissions scenarios modeled (Luers *et al.* 2006). Vegetative cover may also change, with decreases in evergreen conifer forest and increases in grasslands and mixed evergreen forests.

The likely change in amount of rainfall in Northern and Central Coastal streams under various warming scenarios is less certain, although as noted above, total rainfall across the state is expected to decline.

For the California North Coast, some models show large increases (75 to 200 percent) while other models show decreases of 15 to 30 percent (Hayhoe *et al.* 2004). Many of these changes are likely to further degrade salmonid habitat by, for example, reducing stream flows during the summer and raising summer water temperatures. Estuaries may also experience changes detrimental to salmonids and green sturgeon. Estuarine productivity is likely to change based on changes in freshwater flows, nutrient cycling, and sediment amounts (Scavia *et al.* 2002). In marine environments, ecosystems and habitats important to sub adult and adult salmonids are likely to experience changes in temperatures, circulation and chemistry, and food supplies (Feely *et al.* 2004, Brewer 2008, Osgood 2008, Turley 2008). The projections described above are for the mid to late 21st Century. In shorter time frames natural climate conditions are more likely to predominate (Cox and Stephenson 2007, Smith *et al.* 2007).

V. ENVIRONMENTAL BASELINE

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species in the action area. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (50 CFR §402.02).

The action area for the Vallejo-Baylink Ferry Maintenance Facility includes both an upland area on Mare Island and an estuarine area in Mare Island Strait. The upland portion of the project will occur in an area of approximately 8,100 square feet on Mare Island adjacent to Waterfront Avenue, between 6th and 7th Avenues. The aquatic portion of the action area is within Mare Island Strait and extends a radial distance of 7,065 feet from the project site (Figure 2). This area contains the project's construction footprint, and areas that may be affected by elevated sound (over 150 dB RMS re: 1 μ Pa during pile driving), increased levels of turbidity, and shading by the new floating docks and gangway.

A. Action Area Overview

Mare Island Strait is the lowermost reach of the Napa River, and it connects the Napa River with San Pablo Bay. The Napa River watershed is the largest watershed in the northern San Francisco Bay region, with 48 major tributaries, and draining an area of approximately 426 miles. The Napa River watershed provides spawning and juvenile rearing habitat for threatened CCC steelhead.

Mare Island Strait is within the San Francisco Bay estuary. The San Francisco Bay/Delta estuary is the largest estuary on the Pacific coast of North and South America, with a surface area of

1,631 square miles (SFEI 1994). Located about halfway up the California coast from the Mexican border, it is the natural exit point for 60 percent of California's runoff from tributary rivers and streams draining 40 percent of California's surface area (Nichols and Pamatmat 1988). California's two largest rivers, the Sacramento and San Joaquin, merge to form the Delta and estuary. The confluence of the Sacramento and San Joaquin rivers at the Sacramento-San Joaquin Delta is directly southeast of the action area. These rivers drain California's Central Valley, consisting of parts of the Sierra Nevada and Cascade mountains, and merge to form the largest estuary on the west coast of North America. The freshwater runoff from the Delta flows seaward, mixing with ocean water through Suisun Bay, San Pablo Bay, and lastly San Francisco Bay. San Francisco Bay empties into the Pacific Ocean through the Golden Gate.

The climate in the area is Mediterranean, with most precipitation falling in winter and spring as rain throughout the Central Valley and the San Francisco Bay Area, and as snow in the Sierra Nevada and Cascades. The freshwater outflow pattern is seasonal with highest outflow occurring in winter and spring. In summer, freshwater inflow to San Francisco Bay is controlled mainly by water released from Central Valley reservoirs.

The action area includes shoreline and open water areas in the Mare Island Strait. Open water areas are influenced from freshwater discharge from the Napa River, surface wave energy, and tide-generated current. Water depth at the project site ranges between -15 and -40 feet at MLLW. Benthic habitat in the action area is primarily composed of fine-grain silt and clay. A large ship is currently docked in the action area and is a considerable source of shading (25,000 square feet). The ship is proposed for removal prior to project construction. The shoreline of the Mare Island Strait in the action area has been entirely modified by the construction of piers, wharves, bulkheads, and landfill.

The project site also includes upland areas located within the former Mare Island Naval Shipyard, which was closed in 1996. The upland portion of the project site is developed, and includes two joined buildings from the former Mare Island Naval Shipyard (Building 165 was formerly used as a lead casting shop and Building 855 was a multi-purpose warehouse). Three small multi-purpose buildings, a pump station, a gas tank, two dust collectors, and two generators are also on site. Between the buildings and the waterfront, adjacent to Mare Island Strait, is an abandoned railway corridor that was used during the base's operation. Between the proposed landside facilities and the waterside facilities for the new ferry maintenance facility, the shoreline of Mare Island Strait consists of a timber and concrete quay wall.

B. Status of Listed Species and Critical Habitat in the Action Area

1. CV Steelhead, CV Spring-Run Chinook Salmon, and Sacramento River Winter-Run Chinook Salmon

The action area is used as a migration corridor by listed CV steelhead, CV spring-run Chinook salmon and Sacramento River winter-run Chinook salmon. The adult salmonids migrate from the Pacific Ocean through the San Francisco Bay estuary as they seek the upstream spawning grounds of their natal streams. Accessible habitat for salmonid spawning and rearing exists in the Central Valley year-round; and adult Central Valley steelhead migration has been recorded in

the Sacramento River during most months of the year, but peak upriver migration in the mainstem Sacramento River (several miles upstream of the action area) occurs in the fall (Bailey 1954; Hallock *et al.* 1961). Migrating adult spring-run Chinook salmon are present in the Sacramento River between March and July, and migrating adult Sacramento River winter-run Chinook salmon are present between November and June. Based on this information, Central Valley steelhead, Central Valley spring-run Chinook salmon and Sacramento River winter-run Chinook salmon that are making upriver migrations are not likely to occur in or near the action area during pile driving activities by the Vallejo-Baylink Ferry Maintenance Facility project.

The juvenile Central Valley and Sacramento River salmonids migrate downstream from their natal stream in the Sacramento River and San Joaquin River watersheds, through the Delta and into the San Francisco Bay estuary. Central Valley steelhead and Chinook salmon smolts migrate downstream through the bay during the late winter and spring months. During the course of their downstream migration, juvenile salmon and steelhead utilize the estuary for seasonal rearing, and as a migration corridor to the sea. Historically, the tidal marshes of San Francisco Bay provided a highly productive estuarine environment for juvenile anadromous salmonids. However, loss of habitat, changes in prey communities, and water-flow alterations and reductions have degraded habitat and limit the ability of the Bay to support juvenile rearing. McFarlane and Norton (2002) found that fall-run Chinook experienced little growth, depleted condition, and no accumulation of lipid energy reserves during the relatively limited time the fish spent transiting the 40-mile length of the estuary.

Recent studies conducted by the California Fish Tracking Consortium (CFTC) provide information regarding the length of residence time in San Francisco Bay by Central Valley salmonid smolts. Thousands of Central Valley late fall-run Chinook salmon and Central Valley steelhead smolts were tagged with acoustic transmitters and released in the Sacramento River from 2006 through 2010. Most of these fish migrate downstream relatively quickly having a mean transit time of 2.6 days for salmon and steelhead smolts to travel over 25 miles from the Carquinez Strait to the Golden Gate (California Fish Tracking Consortium, unpublished data 2009).

Designated critical habitat for Sacramento winter-run Chinook salmon includes the Mare Island Strait and the waterside portion of the project's action area. Features of designated critical habitat for winter-run Chinook salmon in the action area essential for their conservation are habitat areas and adequate prey that are uncontaminated. These physical and biological features of designated critical habitat within the action area are partially degraded and limited. Habitat degradation in the action area is primarily due to altered and diminished freshwater inflow, shoreline development, shoreline stabilization, non-native invasive species, discharge and accumulation of contaminants, and periodic dredging for navigation.

2. CCC Steelhead

The action area serves as a migration corridor for CCC steelhead. All Napa River CCC steelhead pass through the Mare Island Strait to migrate to and from the ocean. Adult CCC steelhead typically enter the system as mature adults to spawn during winter and spring months (winter steelhead reproductive ecotype). Adult CCC steelhead migrate upstream to the Napa

River watershed through the Mare Island Strait from December through March. Upriver migration of CCC steelhead is generally correlated with higher winter flow events.

Juvenile CCC steelhead occur within the Mare Island Strait (en route from the Napa River to the Pacific Ocean), and are expected to emigrate during late winter and spring months. Based on the migration timing of CCC steelhead, steelhead are not expected to be present in the action area during in-water construction.

Designated critical habitat for CCC steelhead includes the Mare Island Strait and the project's waterside portion of the action area. PCE's essential for the conservation of CCC steelhead are estuarine areas free of obstruction and excessive predation with: (1) water quality, water quantity and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; (2) natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and (3) juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation (70 FR 52488). Within the action area of this project, essential features of critical habitat include the estuarine water column, foraging habitat, and food resources used by steelhead as part of their juvenile downstream migration or adult spawning upstream migration. These PCEs of designated critical habitat within the action area are partially degraded and limited due to altered and diminished freshwater inflow, shoreline development, shoreline stabilization, non-native invasive species, discharge and accumulation of contaminants, and periodic dredging for navigation. Mare Island Strait is a fast-flowing navigation channel that experiences periodic dredging to maintain adequate depths. Dredging of channel bottoms often reduces natural cover and forage items. Natural cover for CCC steelhead in the action area does not exist (*e.g.* there are no known eelgrass beds). The transition area between the former naval shipyard and the intertidal zone consists of riprap and seawalls.

3. *Green Sturgeon*

Green sturgeon are iteroparous, and adults pass through the San Francisco Bay estuary during spawning, and post-spawning migrations. Pre-spawn green sturgeon enter the 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 the bay in autumn for months after emigrating from the Sacramento River and prior to emigrating into the ocean. Juvenile green sturgeon move into estuaries early in their first year, where they may remain for 2-3 years before migrating to the ocean (Allen and Cech, Jr. 2007; Kelly *et al.* 2007). Sub-adult green sturgeon utilize both ocean and estuarine environments for rearing and foraging. Due to these life-history characteristics, juvenile and sub-adult green sturgeon may be present in Mare Island Strait at any time of the year.

Mare Island Strait is located within designated critical habitat for the southern DPS of green sturgeon. PCEs for green sturgeon in estuarine areas are: food resources, water flow, water quality, migratory corridor, water depth, and sediment quality. These PCEs for green sturgeon critical habitat in the area are partially degraded. Habitat degradation in the action area is primarily due to altered and diminished freshwater inflow, shoreline development, shoreline

stabilization, non-native invasive species, discharge and accumulation of contaminants, and periodic dredging for navigation.

C. Factors Affecting the Species Environment and Critical Habitat in the Action Area

Profound alterations to the environment of the San Francisco Bay estuary began with the discovery of gold in the middle of the 19th century. Dam construction, water diversion, hydraulic mining, and the diking and filling of tidal marshes soon followed, launching the San Francisco Bay Area into an era of rapid urban development and coincident habitat degradation. There have also been alterations to the biological community as a result of human activities, including hatchery practices and the introduction of non-native species.

At Mare Island Strait, the action area was impacted by the U.S. Navy's operation of the Mare Island Shipyard from 1854 to 1996. Contaminants originating from the shipyard and other U.S. Navy activities on Mare Island degraded water quality and accumulated in the sediments of Mare Island Strait. For example, sediments in the project area contain butyltin compounds (Pereira *et al.* 1999). Tributyltin is extremely toxic to marine organisms, and it is classified as a potent endocrine disrupting chemical. In the past, the area in front of the shipyard was regularly dredged to provide access for large ships into the berths and the drydocks. Adjacent to the shipyard, the Corps periodically dredged the Mare Island Strait Federal Navigation Channel until the shipyard closed in 1996. Dredging the Federal Navigation Channel and the area immediately in front of the shipyard likely collected and removed from the Mare Island Strait a high percentage of sediments laden with contaminants. There are also several marinas and piers along the Mare Island Strait that are periodically dredged for navigation purposes, including the Vallejo Yacht Club, Army Reserve Piers 22 and 23, Vallejo Ferry Terminal, and the City of Vallejo's North and South Marinas.

D. Previous Section 7 Consultations and Section 10 Permits in the Action Area

Since 2006, pursuant to section 7 of the ESA, NMFS has conducted three interagency consultations that affected the action area of this project. In August of 2006, NMFS and the U.S. Department of the Army completed consultation on the U.S. Army Reserve 63D Regional Readiness Command Project. Project construction required dredging at Piers 22 and 23 at Mare Island in the lower Napa River (NMFS administrative record #151422SWR2003SR8682). Dredged materials were disposed of at the Carquinez Strait (SF-9) site. This consultation concluded the project was not likely to adversely affect Sacramento River winter-run Chinook salmon, CV spring-run Chinook salmon, CCC steelhead, or CV steelhead or southern DPS green sturgeon.

In December of 2009, NMFS and the U.S. Department of the Navy completed consultation on the Mare Island Mercury Remedial Action Project. Project construction required removal of mercury-contaminated sediment in San Pablo Bay (NMFS administrative record #151422SWR2009SR00560). This consultation concluded the project was not likely to adversely affect Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, CCC steelhead, or Central Valley steelhead or southern DPS green sturgeon.

In July of 2010, NMFS and the U.S. Army Corps of Engineers completed consultation on the Allied Defense Recycling Mare Island Shipyard Berths 11-16 Project. The Corps' permit authorizes periodic dredging over a 10-year period by Allied Defense Recycling in order to conduct operations at the former U.S. Navy dry dock facilities at Mare Island in Solano County, California (NMFS administrative record #151422SWR2009SR00560). This consultation concluded that while the project was likely to adversely affect Sacramento River winter-run Chinook salmon, CV spring-run Chinook salmon, CCC steelhead, or CV steelhead and southern DPS green sturgeon, it was not likely to jeopardize these species or adversely modify Sacramento River winter-run Chinook salmon, southern DPS green sturgeon, or CCC steelhead critical habitat.

VI. EFFECTS OF THE PROPOSED ACTION

The purpose of this section is to identify the direct and indirect effects of the proposed action, and any interrelated or interdependent activities, on threatened CCC and CV steelhead, threatened CV spring-run Chinook salmon, endangered Sacramento River winter-run Chinook salmon, threatened southern DPS green sturgeon; and designated critical habitat for Sacramento River winter-run Chinook salmon, CCC steelhead and southern DPS green sturgeon. The assessment presented in this biological opinion is based upon our knowledge and review of the ecological literature concerning the effects of loss and alteration of habitat elements important to listed salmonids and green sturgeon, including the PCEs of critical habitat. This information was used to gauge the likely effects of the proposed project via an exposure and response framework that focuses on what stressors (physical, chemical, or biotic), directly or indirectly caused by the proposed action, that listed salmonids and green sturgeon and their critical habitat are likely to be exposed to. Next, we evaluate the likely response of listed salmonids, sturgeon and critical habitat to these stressors in terms of changes to listed salmonid and sturgeon survival, growth and reproduction, and changes to the ability of PCEs to support the value of critical habitat. PCEs include sites essential to support one or more life stages of the species. These sites (for migration, spawning, and rearing) in turn contain physical and biological features that are essential to the conservation of the species. Where data to quantitatively determine the effects of the proposed action on listed species and critical habitat is not available or limited, the assessment presented in this biological opinion relies on the best available and relevant qualitative data.

Construction activities associated with the new Vallejo-Baylink Ferry Maintenance Facility are expected to temporarily affect threatened green sturgeon through underwater noise during pile driving and degradation of water quality. The construction of the landside and waterside elements of the new ferry maintenance facility is expected to be completed in approximately 7 months between March and October during one year. In-water work for the waterside facilities is expected to be completed in approximately 3 months and will be limited to the period between July 1 to October 30. Pile installation will occur for 10 days within a three-week period between July 1 and October 30. The applicant initially planned for construction of the new facility in 2012, but current funding issues may delay construction to 2013 or 2014. When completed, the operation of ferry boats to and from the new facility will affect listed anadromous salmonids and green sturgeon through temporary increases in turbidity and noise.

With the project's proposed in-water construction window of July 1 to October 30, juvenile and adult listed salmonids are not anticipated to be in the action area during in-water construction activities. Juvenile and sub-adult green sturgeon may be present in Mare Island Strait year-round and exposed to the effects of construction of the project's waterside facilities. The presence of post-spawning adult sturgeon may also overlap with construction activities during the months of September and October. The potential effects of the action are presented in detail below. NMFS does not anticipate any adverse effects to listed species or critical habitat from the inland portion of the proposed project, because the applicant will implement measures (i.e., accidental spill plan, fuel tanks located in water-tight underground vaults, and sediment containment with berms and dikes) that prevent the runoff and discharge of pollutants from landside activities to the waters of Mare Island Strait; these measures will render any potential effects on listed species or critical habitat discountable. The shoreline at the project site consists of a concrete and timber quay wall, and the project will not modify this existing structure.

A. Species Effects

1. Construction Activities

The project's new waterside facilities consist of four full-service berths for ferry boats. Two berths will be used for maintenance and the other two berths will be used for mooring. The berths will be composed of floating docks which are fixed in position with guide piles and fender piles. In addition to the four berths, an existing 4,080 square-foot maintenance float would be moved from the old maintenance facility to the new facility and secured with guide piles. A 10-foot wide gangway will be installed and extend 90 feet over the waters of Mare Island Strait for access from the existing waterfront quay wall to the new docks.

In order to install the new gangway, docks, and maintenance float up to 54 piles of various sizes and materials would be installed in the Mare Island Strait. The potential effects of elevated underwater sound levels during pile driving are presented below by pile type and size. The potential effects of in-water construction activities on water quality are also presented below.

a. Sound Pressure Impacts on Fish from Pile Driving

Overview of Pile Driving Impacts. Pile driving activities may affect listed salmonids and green sturgeon through exposure to high underwater sound levels produced during pile driving and degradation of water quality during pile driving activities. The underwater sound pressure waves that have the potential to adversely affect to listed salmonids and green sturgeon originate with the contact of the hammer with the top of the pile. The impact of the hammer on the top of the pile causes a wave to travel down the pile and causes the pile to resonate radially and longitudinally like a gigantic bell. Most of the acoustic energy is a result of the outward expansion and inward contraction of the walls of the pile as the compression wave moves down the pile from the hammer to the end of the pile buried in the bay bottom. Water is virtually incompressible and the outward movement of the pile (by a fraction of an inch) followed by the pile walls pulling back inward to their original shape, sends an underwater pressure wave propagating outward from the pile in all directions. The pile resonates sending out a succession

of waves even as it is pushed several inches deeper into the bay bottom. Piles can be composed of wood, steel, or concrete. Different types of piles result in different levels of underwater noise. For construction of the Vallejo-Baylink Ferry Maintenance Facility, the applicant proposes to use plastic piles and steel piles.

Available information indicates that fish may be injured or killed when exposed to elevated underwater sound pressure waves generated by steel piles installed with impact hammers. Pathologies associated with very high sound levels are collectively known as *barotraumas*. Barotraumas are pathologies associated with exposure to drastic changes in pressure. These include hemorrhage and rupture of internal organs, including the swim bladder and kidneys in fish. Death can be instantaneous, occur within minutes after exposure, or occur several days later. An important characteristic of the underwater sound that causes injury is the frequency. During pile installation, most energy is contained within the frequency range (100-1,000 Hertz) which results in reverberation of the swim bladder.

Exposure to sound for longer periods of time can also injure and kill fish (Hastings 1995). Hastings (1995) found death rates of 50 percent and 56 percent for gouramis (*Trichogaster sp.*) when exposed to continuous sounds at 192 dB referenced to one micropascal squared second (dB re: $1\mu\text{Pa}^2\text{-s}$) at 400 Hz and 198 dB re: $1\mu\text{Pa}^2\text{-s}$ at 150 Hz, respectively, and 25 percent for goldfish (*Carassius auratus*) when exposed to sounds of 204 dB re: $1\mu\text{Pa}^2\text{-s}$ at 250 Hz for 2 hours or less. Hastings (1995) also reported that acoustic “stunning,” a potentially lethal effect resulting in a physiological shutdown of body functions, immobilized gourami within eight to thirty minutes of exposure to the aforementioned sounds. These sound pressure levels can also result in hearing damage to fish (Enger 1981; Hastings *et al.* 1995, 1996). Additional detrimental effects on fish from sound levels such as those noted above include stress, increasing risk of mortality by reducing predator avoidance capability, and interfering with communication necessary for navigation and reproduction (Scholik and Yan 2001; Shin 1995; Popper 1997).

In the *Compendium of Pile Driving Sound Data* (Illingworth and Rodkin 2007) pile driving case studies are compiled in order to provide information regarding the underwater sound pressure levels generated with the installation of steel and concrete piles by different hammer types. Several pile driving case studies conducted within the San Francisco Bay region are included in the compendium. A dual metric criteria of 206 dB referenced to one micropascal (re: $1\mu\text{Pa}$) peak sound pressure level (SPL) for any single strike and an accumulated sound exposure level (SEL) of 187 dB re: $1\mu\text{Pa}^2\text{-s}$ are currently used by NMFS to correlate physical injury to fish greater than 2 grams in size from underwater sound produced during the installation of piles with impact hammers. As distance from the pile increases, sound attenuation from transmission loss reduces sound pressure levels and the potential harmful effects to fish also decrease. Disturbance and noise associated with construction at the pile driving site may also startle fish and result in dispersion from the action area.

A study in Puget Sound, Washington suggests that pile driving operations disrupt juvenile pink and chum salmon (*Oncorhynchus spp.*) behavior (Feist *et al.* 1992). Though no underwater sound measurements are available from that study, comparisons between juvenile salmon schooling behavior in areas subjected to pile driving/construction and other areas where there was no pile driving/construction indicate that there were fewer schools of fish in the pile-driving

areas than in the non-pile driving areas. Based on these observations, pile-driving operations may disrupt normal foraging, schooling, and migratory behaviors of juvenile anadromous salmonids.

Currently, there is very little data available regarding effects of pile driving on green sturgeon. However, green sturgeon use estuarine environments for foraging and migration in a manner similar to anadromous salmonids. Thus, it is reasonable to assume that green sturgeon could experience similar disruption of behavioral patterns, as discussed above for salmonids during pile driving operations. Additionally, there is evidence of high sound pressure levels generated by pile driving resulting in the mortality of sturgeon. During construction of the Benicia-Martinez Bridge in May 2002, 98-inch diameter piles were driven by a large impact hammer in water 40 to 50 feet deep. Without the benefit of a sound attenuation device, such as an air bubble curtain, peak underwater sound pressure levels during a single strike ranged from 227 dB (re 1 μ Pa) at approximately 16 feet from the pile to 178 dB at approximately 3,600 feet from the pile (Illingworth and Rodkin 2007). Fish killed and collected at the Benicia-Martinez Bridge during pile driving in May 2002 included a 24-inch juvenile white sturgeon (Caltrans, unpublished data 2002).

The degree to which an individual fish exposed to underwater sound will be affected (from a startle response to immediate mortality) is dependent on a number of variables such as the species of fish, size of the fish, presence of a swimbladder, sound pressure intensity and frequency, shape of the sound wave (rise time), depth of the water around the pile and the bottom substrate composition and texture. Both salmonids and sturgeon possess physostomous swimbladders (Smith 1982). As indicated by Keevin and Hempen (1997), fish with swimbladders are more susceptible to injury than fish which lack swimbladders. Sturgeon are known to have large swimbladders (Nelson 1994). In addition, both salmonids and sturgeon are hearing generalists⁵ (ICF Jones and Stokes, and Illingworth and Rodkin, Inc., 2009; Popper 2005). Based on the above information, there is likely a similar behavioral response by listed anadromous salmonids and green sturgeon to elevated levels of underwater sound produced when driving piles in or near water. Until new information indicates otherwise, NMFS believes a 150 dB root-mean-square pressure (RMS) threshold for behavioral responses for salmonids and green sturgeon is appropriate.

Project Specific Considerations. In addition to the observations and results at the above pile driving projects, site-specific conditions should be considered for assessment of the potential effects of pile driving associated with proposed projects. Effects on an individual fish during pile driving are dependent on a number of variables including environmental conditions at the project site, specific construction techniques, and the construction schedule. As stated above, a dual metric criteria of 206 dB re: 1 μ Pa peak SPL for any single strike and an accumulated SEL of 187 dB re: 1 μ Pa²-s are currently used by NMFS as thresholds to correlate physical injury to fish greater than 2 grams in size from underwater sound produced during the installation of piles with impact hammers. As distance from the pile increases, sound attenuation reduces sound pressure levels and the potential harmful effects to fish also decrease. Behavioral effects may

⁵ Hearing generalists sense sound directly through their inner ear but also sense sound energy from the swim bladder. Hearing specialists are more complex and have evolved different mechanisms to couple the swim bladder (or other gas-filled structure) to the ear.

extend radially from the pile to the sound level threshold of 150 dB RMS.

Water depths are known to influence the rate of sound attenuation and travel distance. In deep water areas, high sound pressure waves are travel further. Within shallow water, much of the acoustic energy is absorbed by the bottom and reflected off the surface back down to the bottom and even backwards towards the pile. The rate of attenuation is much higher in shallower water reducing the expected area of adverse effects as compared to deeper water. Pile driving for construction of the Vallejo-Baylink Ferry Maintenance Facility will occur in water depths ranging from -15 to -40 feet at MLLW.

Sound attenuation devices are commonly used to reduce the level of elevated sound pressure levels during pile driving. Cofferdams can be used to completely dewater the area around the pile and will effectively reduce the level of SPLs transmitted into the water column. However, cofferdams can be expensive and create additional impacts to fish during construction and dewatering. Creating a curtain of air around the sound source (*i.e.* pile being driven) has proven to be a very effective means of reducing underwater SPLs. Encapsulating the piles with an air bubble curtain does not require dewatering of the site. Bubble curtains reduce the radiation of sound from the pile into the water by making the sound pass through a “curtain” of low-density air bubbles. Hydroacoustic monitoring has shown that air bubble curtains can decrease the overall level of SPLs in the adjacent water column and decrease the extent to which the adverse sound-related impacts occur. ICF Jones and Stokes, and Illingworth and Rodkin, Inc. (2009) report the use of a bubble curtain is capable of providing up to 20 dB of attenuation during impact hammer driving depending on the size of the pile. Existing data generally indicate that an air bubble curtain used on a small-sized steel or concrete pile (*i.e.*, pile with a cross-sectional dimension of 24 inches or less) will provide about 5 dB of noise reduction. For a mid-sized steel pile (*i.e.*, pile with a dimension greater than 24 but less than 48 inches), the data indicate that an air bubble curtain will provide about 10 dB of noise reduction. For larger piles (*i.e.*, piles with a dimension of greater than 48 inches) up to 20 dB of noise reduction may occur (ICF Jones and Stokes, and Illingworth and Rodkin, Inc., 2009). In general, sound attention rates increase with more bubbles and (to a point) a thicker curtain (ICF Jones and Stokes and Illingworth and Rodkin Inc. 2009).

For the Vallejo-Baylink Ferry Maintenance Facility Project, the applicant proposes to use a bubble curtain to attenuate underwater sound levels during impact hammer driving of steel piles. Based on the type of bubble curtain and pile sizes proposed by the applicant, the assessment of acoustic impacts presented in this biological opinion assumes an estimated reduction of 10 dB in sound pressure. As a general rule, sound reductions of greater than 10 dB with attenuation systems cannot be reliably predicted (ICF Jones and Stokes, and Illingworth and Rodkin, Inc., 2009).

The timing and duration of pile driving influences the level of potential impact on fish. Some species of fish occur seasonally at a project site and in-water construction activities can be scheduled to avoid periods when the target fish species is mostly likely to be present. The duration of pile driving also influences the level of risk to fish. If pile driving extends continuously for hours or days, the chance of encounters with fish in the vicinity increases, accordingly. If pile driving is occurring near shore at low tide, fewer large fish are likely to be

present due to shallow water depths. For the Vallejo-Baylink project, pile driving would occur over a 10-day period between July 1 and October 30. Due to the proposed timing of the project's in-water construction activities, adult and juvenile Central Valley steelhead, CCC steelhead, and Sacramento River winter-run Chinook salmon are not likely to be present. Juvenile and sub-adult green sturgeon may be found in San Francisco Bay including the Mare Island Strait year-round and could be present during pile driving by this project. Pre-spawning adult sturgeon may be present during the spring months and post-spawning adults present in the fall.

Assessment of Pile Driving Effects. Pile driving effects would be limited to threatened green sturgeon, because listed anadromous salmonids are not expected to be in the project area during the in-water construction period of July 1 through October 30. Potential effects of elevated sound levels generated by rock drilling and pile driving on green sturgeon are presented below.

Rock drilling is proposed by the applicant to create a borehole for the new piles prior to driving by an impact hammer. Rotary boring techniques (drilling) will be performed into the substrate of Mare Island Strait at each location a pile is to be installed. Drilling will occur to a sufficient depth for "socketing" the new pile. To assess the potential environmental effects of rock drilling, acoustic recordings of an oscillator system for drilled shafts were made in Chesapeake, Virginia by HDR Alaska, Inc. (2011). Results showed that SPL values during drilling for placement of large diameter (12-foot) steel casings ranged from 115.6 to 141.5 dB RMS re 1 μ Pa, with a mean of 121.6 dB re 1 μ Pa (HDR Alaska, Inc. 2011). In San Francisco Bay, background noise levels are on the order of 140–155 dB as recently measured on the San Francisco Bay Bridge project and at the port of Oakland (Burgess *et al.* 2005). Therefore, the impacts associated with noise levels during rock drilling are expected to be insignificant for listed salmonids and green sturgeon, because they will not exceed existing background noise levels. Potential effects to water quality associated with rock drilling are expected to be the same as pile driving and are presented below.

Sound monitoring data collected from recent pile driving projects indicate that sound pressure levels resulting from the Vallejo-Baylink Ferry Maintenance Facility's pile driving activities will, at times, exceed the dual metric criteria and therefore potentially injury listed fish in the project's action area (Table 2). Potential injury and mortality of listed fish could occur within a radial distance up to 700 feet when sound pressure levels exceed the 187 dB SEL cumulative threshold. Behavioral effects could occur within a radial distance up to 7,065 feet when sound pressure levels exceed the 150 dB RMS threshold for behavioral responses. For the single strike threshold for injury and mortality, NMFS predicts sound pressure levels of 206 dB peak should not occur at a distance greater than 13 feet from the 42-inch piles and at a distance of 9 feet from the 36-inch, 30-inch, and 24-inch piles, but that sound pressure levels of 206 dB peak or greater could occur within 13 feet and 9 feet, respectively.⁶

For the purposes of this analysis, we have used the maximum distances peak SPLs and accumulated SELs could travel as a reasonable worst case scenario. The project description does not indicate the days on which the 42-inch piles will be driven, nor does it preclude the driving of 42-inch piles immediately preceding or following the driving of smaller piles on the same day.

⁶ The 206 dB peak threshold is not expected to be exceeded at any distance during installation of the 12-inch diameter piles.

Therefore, even though Table 2 (below) indicates that peak SPLs of 206 dB associated with smaller piles should be less than 13 feet and accumulated SELs should be less than 700 feet, this effects analysis assumes that all 42, 36, 30, and 24-inch piles will have a 13-foot, 206 dB peak range and a 700-foot, 187 dB accumulated SEL range.

Table 2. Sound levels associated with impact hammer pile driving (peak and RMS sound levels are referenced to one micropascal and SEL levels are referenced to one micropascal squared-second).

Pile type and size	Max single strike peak at 33 feet (10 m)	Accumulat ed SEL at 33 feet (10 m)	Single strike RMS at 33 feet (10 m)	Distance (feet) to 206 dB peak	Distance (ft) to 187 dB accumulated SEL/day	Distance (feet) to 150 dB RMS
42-inch steel	200 dB	207 dB	185 dB	13 feet	700 feet	7,065 feet
36-inch steel	198 dB	207 dB	183 dB	9 feet	700 feet	5,200 feet
30-inch steel	197 dB	198 dB	182 dB	9 feet	170 feet	4,460 feet
24-inch steel	197 dB	182 dB	198 dB	9 feet	164 feet	4,460 feet
12-inch steel	182 dB	183 dB	167 dB	n/a	16 feet	450 feet
13-inch plastic	n/a – vibratory hammer	n/a – vibratory hammer	n/a – vibratory hammer	n/a	n/a	70 feet

Although the spreadsheet utilized by NMFS can predict sound pressure levels at a distance of less than 33 feet (*i.e.*, 10 meters) from a pile, hydroacoustic measurements in the field generally cannot be made this close to a pile. Near-field effects of sound waves, on-site equipment, the air bubble curtain, and safety typically don't allow for hydroacoustic monitoring to be performed within a few feet of a pile. At this close range, NMFS believes it is unlikely that exceedence of the 206 dB peak single strike threshold by this project will result in the injury or mortality of green sturgeon and the basis for this finding is presented below.

Several factors make it unlikely that sturgeon would be present or injured in the area immediately adjacent to a pile being driven by this project. First, the placement of an air bubble curtain will occupy 5-10 feet of the radial distance immediately outward from the pile. Air bubble curtains are constructed by the placement of one or more horizontal concentric rings of perforated tubing (such as PVC) around the pile. Air is pumped through the tubes and into the rings to emit a curtain of bubbles that encapsulate the pile. To optimize the sound attenuation capability of the curtain, the amount of bubbles and thickness of the curtain are maximized by adjusting the flow of compressed air delivered to the perforated tubing. Thus, equipment and the air bubble curtain itself will physically take up 5-10 feet immediately outward of the pile. Secondly, activation of the air bubble curtain immediately prior to the initiation of pile driving is expected to startle fish adjacent to the pile and likely result in a flight response. Additional noise will be created by the air compressors operating the bubble curtain, and boats and barges

containing the pile driving equipment and crew will be operating immediately overhead. This noise will likely be perceived by fish as a stimulus indicating potential danger in its immediate environment, and sturgeon are not expected to remain in the area directly adjacent to a pile (over a 33-foot radial distance from the pile) during driving. Sonalyst (1996) report a variety of fish species demonstrate an avoidance reaction in the near-field (*i.e.*, immediately adjacent to the sound source) to underwater sounds. Sonalyst (1996) did not define “near-field” as a specific distance, but ICF Jones and Stokes and Illingworth and Rodkin Inc. (2009) use 33 feet (10 meters) for near-field effects and to estimate the area of acoustic impact. At the Head of Old River in the Delta, Bowen and Bark (2010) reported a non-physical barrier comprised of an air bubble combined with sound and lights deterred the movement of up to 80 percent of juvenile salmon with a smaller fraction passing through the barrier. Thirdly, the short duration of the pile driving actions (less than 10 days) to install the pilings for the project will also limit the amount of exposure incurred by green sturgeon in the action area.

Table 2 presents sound levels anticipated to occur during impact hammer driving. The 42-inch diameter steel piles are the largest piles to be installed by this project, and would produce the highest sound levels. To install all thirteen 42-inch diameter piles, noise impacts associated with driving will persist for a total of 9.1 hours; noise impacts per day will not exceed 3.5 hours. A total of seventeen 36-inch steel piles will be installed for construction of the new ferry maintenance facility and the driving of these piles will persist for a total of 11.9 hours; noise impacts per day will not exceed 3.5 hours. Two 30-inch steel piles will be installed by this project and pile driving will persist for 0.83 hour over a single day. Three 24-inch steel piles will be installed and it is anticipated that impact hammer driving of the 24-inch piles will persist for 1.25 hours over one day. Three 12-inch steel piles will be installed and driving will persist for 0.5 hours over a one-day period.

The project also proposes to install sixteen 13-inch reinforced plastic piles with a vibratory hammer. Hydroacoustic data collected from similar projects with vibratory hammers (Illingworth and Rodkin Inc. 2007) indicates that sound pressure levels created during installation of the 13-inch plastic piles should not present a risk of physical injury to listed fish. NMFS anticipates the extent of SPLs above an accumulated SEL of 187 dB would extend up to a radial distance of approximately 700 feet from the pile driving activities. Since the proposed project is located adjacent to a quay wall, sound will mainly travel outwards into Mare Island Strait. For the largest piles (*i.e.*, 42-inch diameter) the area of effect will encompass over half the width of Mare Island Strait. For the purposes of this analysis, the zone of potential injury or mortality to threatened green sturgeon is the area in which fish could experience a range of barotraumas, including the damage to the inner ear, eyes, blood, nervous system, kidney, and liver. These injuries have the potential to result in the mortality of an individual either immediately or later in time.

Beyond the range of physical injury, extending out to the 150 dB RMS distance, NMFS estimates fish may demonstrate temporary abnormal behavior indicative of stress or exhibit a startle response. As described previously, a fish that exhibits a startle response may not be injured, but it is exhibiting behavior that suggests it perceives a stimulus indicating potential danger in its immediate environment, and startle responses are likely to extinguish after a few pile strikes, or diminish as fish leave the area. Shin (1995) described the behavioral response of

snakehead (*Channa argus*) to the noise of pile driving as “agitation” and these fish exhibited a change in swimming behavior. Fewtrell (2003) described the behavioral response of finfish to seismic survey noise as “alarm”. Under the water conditions experienced in the action area and in light of their anticipated behavioral action (to leave the area of higher sound pressures for an area with lower sound pressures) green sturgeon are expected to react to the sound produced by pile driving by swimming away from the action area. Adequate water depths and the open water area of Mare Island Strait and San Pablo Bay adjacent to the action area will provide startled fish sufficient area to escape and elevated sound levels should not result in significant effects on these individuals. Areas adjacent to the project’s action area provide habitat of similar or higher quality and provide adequate carrying capacity to support individual sturgeon that are temporarily displaced during the 10-day period of pile driving.

In general, the effects of the sound generated by this project’s pile driving are expected to be less severe than that for the smaller 2-gram size fish protected by the NMFS dual-metric criteria. However, due to their smaller size, juvenile and sub-adult green sturgeon are, in comparison to adult green sturgeon, more vulnerable to barotramas. Juvenile green sturgeon are typically around 18 inches in length at the time they enter the estuary. Larger fish are, presumably, more tolerant of high levels of sound pressure and would be less affected by pile driving activities. Yelverton *et al.* (1975) reported injury and mortality rates differed significantly depending on fish size in response to an underwater blast. Mortality rates decreased as fish size increased when exposed to the impulse of an underwater blast (Yelverton *et al.* 1975). Since adult sturgeon can be very large (up to 7 feet in length), they are likely to be more resilient to injury and capable of recovering more quickly from temporary disturbances associated with pile driving. The vulnerability of smaller sturgeon to injury or death from pile driving (especially if within close proximity), was demonstrated by high SPLs at the construction site of the Benicia-Martinez Bridge that resulted in the death of a juvenile sturgeon, approximately 24-inches in length.

Although green sturgeon may be subjected to elevated sound levels during pile driving for construction of the Vallejo-Baylink Ferry Maintenance Facility, NMFS estimates that only a very small number of threatened southern DPS green sturgeon may be injured or killed by the proposed pile driving because few individuals are likely to be exposed to an accumulated SEL of 187 dB or greater. Few green sturgeon are anticipated to be injured or killed by elevated sound levels, because green sturgeon abundance is low in Mare Island Strait during the construction period, the duration of all pile driving by the project is less than 24 hours total, and the area of physical injury during pile driving is relatively small in comparison to the size of Mare Island Strait.

Depending on the time of year, green sturgeon may be commonly found within Mare Island Strait as indicated by the results of acoustic tag monitoring conducted by the California Fish Tagging Consortium. Tagging studies have shown that few green sturgeon are present in the Mare Island Strait as adults and sub-adults during late summer and fall months (unpublished data, 2009); this period directly overlaps with this project’s proposed construction season of July 1 to October 30. Green sturgeon adults and sub-adults are more frequently found in the Strait during the winter, spring, and early summer months (unpublished data, 2009). To date, tagging studies provide little information on juvenile green sturgeon, but sampling has indicated juveniles mostly occur in small groups in the San Francisco Bay and Delta (Adams *et al.* 2002)

and are unlikely to occur in more than small numbers in the action area. Therefore, few sturgeon are anticipated to be presented in Mare Island Strait during the 10-day period of pile driving.

During pile driving, peak SPLs above 206 dB will be limited to an area of 13 feet or less from the piles. As presented above, within this near-field area, equipment associated with the air bubble curtain will encroach on this space and most fish are expected to disperse with the activation of the air bubble curtain prior to the initiation of pile driving. Thus, the likelihood of an individual green sturgeon's presence in the single strike peak range is very low; the likelihood of injury is proportionate to the low likelihood of presence. For the zone of accumulated SEL, exposed sturgeon would be unlikely to remain in the same location to experience the full duration of the pile driving (*i.e.*, up to 3.5 hours per day) due to tidal currents and behavioral movements. Thus, few, if any, sturgeon are likely to remain stationary long enough to accumulate SPLs to levels which cause injury or mortality. Research conducted in Puget Sound suggests individual fish are likely to disperse from the immediate vicinity of pile driving. Feist et al. (1992) reported juvenile salmon schools in Puget Sound were fewer in areas subjected to pile driving and likely avoiding the area of elevated sound; thus, it is likely that many other species of fish would also avoid areas with elevated noise levels during pile driving. Although no data are available to quantify the risk of exposure to the accumulated SEL threshold of 187 dB, NMFS believes that, for the reasons stated herein the potential risk of injury and mortality to green sturgeon is low. The noise and SPLs generated by pile driving will be detected by the green sturgeon. Most sturgeon within the action area would be expected to temporarily disperse with this intrusion, or move with tidal currents and behavioral movements. Adjacent areas in Mare Island Strait outside the action area and in San Pablo Bay provide fish sufficient area with habitat of similar or higher quality to avoid harm from increased sound levels in the action area and provide adequate carrying capacity to support individual sturgeon that are temporarily displaced during the 10-day period of pile driving.

b. Impacts to Water Quality

For the Vallejo-Baylink Ferry Maintenance Facility Project, water quality in the action area may be degraded during pile driving, rock drilling and installation of the floating docks. Disturbance of soft bottom sediments in the Mare Island Strait during construction is likely to result in temporary increased levels of turbidity and release of contaminants from sediments in the substrate.

Turbidity. High levels of turbidity may affect fish by disrupting normal feeding behavior, reducing growth rates, increasing stress levels, and reducing respiratory functions (Benfield and Minello 1996; Nightingale and Simenstad 2001). Review of the literature regarding the effects of turbidity associated with dredging operations on anadromous salmonids indicates turbidity may interfere with visual foraging, increase susceptibility to predation, and interfere with migratory behavior. There is little direct information available to assess the effects of turbidity in San Francisco Bay estuary on juvenile or adult green sturgeon. However, this benthic species is well adapted to living in estuaries with fine sediment bottom and is tolerant of high levels of turbidity, because they forage in bottom sediments.

As rock drilling is performed and piles are driven, fine-grain sediments such as the clay and silt material found in Mare Island Strait will be disturbed and generate increased levels of turbidity in the adjacent water column. The extent of turbidity plumes resulting from the proposed project will depend on the tide, currents, and wind conditions during these activities. It is expected that the elevated levels of turbidity will be minor and localized due to the type of work performed by this project. These areas of turbidity are expected to rapidly disperse from the project area with tidal circulation, as strong currents are present within Mare Island Strait. Threatened green sturgeon in the San Francisco Bay estuary commonly encounter areas of increased turbidity due to storm flow runoff events, wind and wave action, and benthic foraging activities of other aquatic organisms. Fish generally react by avoiding areas of high turbidity and return when concentrations of suspended solids are lower. The minor and localized areas of turbidity associated with this project's in-water construction is not expected to result in harm or injury, or behavioral responses that impair migration, foraging, or make green sturgeon more susceptible to predation. If sturgeon are temporarily relocated by areas of increased turbidity, habitat of similar value is available in Mare Island Strait adjacent to the work site, and areas in San Pablo Bay offer significantly higher habitat value for displaced individuals. Adjacent habitat areas also provide adequate carrying capacity to support individual sturgeon that are temporarily displaced during the 10-day period of rock drilling and pile driving.

Listed anadromous salmonids will not be affected by temporary increases in turbidity, because construction activities that disturb bottom sediments will be restricted to the period between July 1 and October 30. Installation of the docks and gangway is not expected to disturb bottom sediments, because these structures will be floating and water depths in the project area range from -15 and -40 feet at MLLW.

Contaminants. Rapid growth and development in and around San Francisco Bay since the Gold Rush in the mid-1800s has significantly affected this estuary and effects include an increased loading of anthropogenic contaminants into the estuary from both point and non-point sources (Perkowski and Beckvar 1997). In the aquatic environment, most anthropogenic chemicals and waste materials, including toxic organic and inorganic chemicals, eventually accumulate in the sediment. Contaminated sediments may be directly toxic to aquatic life or can be a source of contaminants for bioaccumulation in the food chain (Ingersoll 1995).

Although the level of sediment contamination at the project site are unknown, past operations of the former Mare Island Naval Shipyard have likely resulted in the delivery of contaminants to the Strait and accumulation in bottom sediments. For example, Pereira *et al.* (1999) found sediments in Mare Island Strait contained Tributyltin, which originated from past sandblasting and painting of submarine parts, ship hulls, vehicles, railroad cars and small buildings. Tributyltin is extremely toxic to marine organisms, and it is classified as a potent endocrine disrupting chemical. During pile driving and rock drilling, bottom sediments will be suspended and contaminants may be released to the water column. However, based on the project description (including the type of activities conducted, the work span, and equipment used) the suspended plumes of sediment and potential contaminants are expected to be localized and short-term. Any minor and localized elevations in contaminants which might result from those suspended plumes should be quickly diluted by tidal circulation to levels that are unlikely to adversely affect listed green sturgeon. Listed anadromous salmonids will not be affected by

temporary and localized increases in contaminants, because construction activities that disturb bottom sediments will be restricted to the period between July 1 and October 30.

c. Impacts of Future Operations at the Ferry Maintenance Facility. Long-term ferry maintenance facility operations such as refueling, fluid leakage, and equipment maintenance, near Mare Island Strait pose some risk of contamination of aquatic habitat and subsequent injury or death to listed salmonids and green sturgeon. Oils and similar substances from ferry maintenance activities can contain a wide variety of polynuclear aromatic hydrocarbons (PAHs), and metals. Both can result in adverse impacts to salmonids. PAHs can harm the benthic prey items (Eisler 2000). Some of the effects that metals can have on fish are: immobilization and impaired locomotion, reduced growth, reduced reproduction, genetic damage, tumors and lesions, developmental abnormalities, behavior changes (avoidance), and impairment of olfactory and brain functions (Eisler 2000).

To address any potential for the release of toxic substances into the waters of Mare Island Strait, the project will prepare and implement an Industrial Storm Water Pollution Prevention Plan. This plan will specify material handling procedures, storage locations and specify measures to collect and convey storm water runoff in accordance with the standards of the California State Water Resources Control Board. All underground tanks will be installed in water tight vaults which will have adequate capacity to contain leaks and spills. All fuel tanks will be equipped with leak detection alarms. The ferry service will also operate in full accordance with stringent effluent limits for oil to sea interfaces and exhaust gas scrubber washwater imposed by the U.S. EPA Vessel General Permit. Due to these measures, NMFS expects that the potential for release of toxic substances as a result of future operations is discountable and are, therefore, unlikely to adversely affect fish.

The new maintenance facility will contain berths for passenger ferry vessels during maintenance and mooring. Ferry boats traveling to and from the berths are expected to disturb bottom sediments and generate increased levels of turbidity in the water column. Noise associated with ferry boat traffic may startle fish. Although there is no water quality or sound data to quantify these levels, observations from similar ferry boat operations in Vallejo, Larkspur, Sausalito and other, similar locations around the San Francisco Bay indicate these impacts will be minor, localized, and limited to short periods of time during the arrival and departure of the ferry boats. At present, Baylink provides passenger ferry service between the City of Vallejo's Ferry Terminal and San Francisco about 10 times each weekday and 3 times on weekend days. For the new Vallejo-Baylink Ferry Maintenance Facility on Mare Island, passenger service will be limited to regularly scheduled arrivals and departures between Mare Island and the Vallejo Ferry Terminal, which is expected to be less frequent than current weekday trips between Vallejo and San Francisco. In addition to passenger service, vessel arrivals and departures will occur for maintenance service and periodic mooring. The total number of future ferry boat arrivals and departures at the new Vallejo-Baylink Maintenance Facility is expected to range from 8 to 12 trips per day.⁷ Increased levels of turbidity associated with ferry boat arrivals and departures are expected last for a matter of a few minutes during each trip and, under the maximum scenario of 12 trips per day, cumulative disturbance over a day will be less than one hour. These short-term increases in turbidity are expected to rapidly return to background levels with tidal circulation

⁷ A single trip is defined as a ferry boat arriving or departing from the facility.

and fish startled by elevated noise levels will have adequate opportunity to avoid boat traffic in adjacent open-water areas in Mare Island Strait and San Pablo Bay. Overall, the effects of ferry boat traffic at the site on the aforementioned listed species are expected to be insignificant.

B. Impacts to Critical Habitat

The action area is located within the Mare Island Strait, and is designated critical habitat for CCC steelhead, Sacramento River winter-run Chinook salmon and the southern DPS of green sturgeon. PCEs of designated critical habitat for CCC steelhead in the action area are estuarine areas with water quality and quantity that support juvenile and adult physiological transitions between fresh and salt water, foraging habitat supporting growth and maturation, natural cover including large substrate and aquatic vegetation, and migratory corridors free of obstructions. For Sacramento winter-run Chinook salmon, physical and biological features of designated critical habitat in the action area are habitat areas and adequate prey that are uncontaminated. The PCEs for critical habitat for the southern DPS of green sturgeon in estuarine areas are food resources, water flow, water quality, migratory corridor, water depth, and sediment quality.

Critical habitat impacts to water quality associated with construction and future operations at the facility are anticipated in the form of temporary increased levels of turbidity and suspended plumes of sediment may also result in the release of contaminants. These effects are expected to be minor and localized due to the type of construction work and nature of ferry boat traffic at this site. The project area contains water depths ranging from -15 to -40 feet MLLW and Mare Island Strait is characterized by strong tidal currents. With these conditions, the effects of turbidity and re-suspension of contaminants on critical habitat are expected to be minor and temporary due to tidal circulation.

Critical habitat impacts may also result from completion of the project due to shading by new overwater structures in Mare Island Strait. Overwater structures, such as docks and piers, result in shading of water column and benthic habitats. Shading is known to have the potential to reduce growth of submerged aquatic vegetation, decrease primary productivity, alter predator-prey interactions, change invertebrate assemblages, and reduce the density of benthic invertebrates (Helfman 1981; Glasby 1999; Struck *et al.* 2004; Stutes *et al.* 2006) all of which may lead to an overall reduction in the quality of fish habitat. To minimize the amount of additional shading, the project has proposed spacing on the gangway to allow for 50 percent light penetration. Since the gangway is approximately 900 square feet, this will reduce 450 square feet of shading. As a result, the docks and gangway of the new facility are expected to increase areas shaded by overwater structure by approximately 10,550 square feet. Additional shading effects will be created by this project's moving an existing 4,080 square-foot maintenance float from a site 0.5 mile upstream. The float's movement will increase the amount of shading at the new facility, but reduce the amount of shading at the old maintenance facility 0.5 mile upstream. Since both the new and old maintenance facilities are within the project's action area, there is no net change of shading in the action area associated with the maintenance float. As explained above, new overwater structure and shading in the action area is created by the docks for the four new berths and the grated gangway which amounts to 10,550 square feet.

The impacts of shading are expected to be insignificant, because the new floating berths would be located 50 feet out from the quay wall where depths range between -15 and -40 feet MLLW. At these depths, it is unlikely that eelgrass will be present because habitat characterized for the establishment of eelgrass beds in San Francisco Bay occurs at depths less than 7 feet (Subtidal Habitat Goals Project 2010). Other species of submerged aquatic vegetation in the action area is also limited by high baseline turbidity levels and frequent boat traffic unrelated to ferry operations. Surveys conducted by Merkel and Associates (2009) for submerged aquatic vegetation within the San Francisco Bay region have not identified eelgrass or other species of submerged aquatic vegetation at the proposed ferry maintenance facility project site. Thus, the area affected by overwater shading does not currently support eelgrass or other species of submerged aquatic vegetation that would be associated with prey species of green sturgeon and juvenile salmonids, nor would it have the potential to support it without the additional shading. Additionally, this project's footprint of 10,550 square feet of new shading in Mare Island Strait is a small proportion of the 57,600 acres of available estuarine habitat in the adjacent San Pablo Bay. Considering the location of this project's floating overwater structures in water depths of -15 to -40 feet MLLW, the increased shading should not decrease primary productivity, alter predator-prey interactions, change invertebrate assemblages, or reduce the density of benthic invertebrates in a manner significant to salmonids or green sturgeon. The effects of shading by this project will not impair or degrade PCEs of designated critical habitat for CCC steelhead, Sacramento River winter-run Chinook salmon, or southern DPS of green sturgeon within the action area.

As stated in detail above, ferry boats traveling to and from the berths are expected to disturb bottom sediments and generate increased levels of turbidity in the water column. Based on the same reasons, we expect that increased levels of turbidity associated with ferry boat arrivals and departures will be minor, temporary, and of insufficient duration to cause an adverse effect to the water quality; furthermore, any elevated turbidity levels are expected to rapidly return to background levels with tidal circulation. Therefore, the operation of maintenance facility is unlikely to adversely affect water quality, PCE's for the southern DPS of green sturgeon, or physical and biological features in the action area that are essential for the conservation of Sacramento River winter-run Chinook salmon.

VII. CUMULATIVE EFFECTS

Cumulative effects are defined in 50 CFR § 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation". Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

NMFS does not anticipate any cumulative effects in the action area other than the continuation of ongoing actions already described in the Environmental Baseline above and climate change. Given current baseline conditions and trends, NMFS does not expect to see significant improvement in habitat conditions in the near future due to existing land and water development affecting the strait. In the long term, climate change may produce temperature and precipitation

changes that may adversely affect listed salmonids and green sturgeon habitat in the action area. For example, flows into the strait may be affected by precipitation changes.

VIII. INTEGRATION AND SYNTHESIS OF EFFECTS

Central California Coast (CCC) and CV steelhead, CV spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, and southern DPS green sturgeon have experienced serious declines in abundance and long-term population trends suggest a negative growth rate. Human-induced factors have reduced populations and degraded habitat, which in turn has reduced the population's resilience to natural events, such as droughts, floods, and variable ocean conditions. Global climate change presents another real threat to the long-term persistence of the population, especially when combined with the current depressed population status and human caused impacts. Within the project's action area in Mare Island Strait, the effects of shoreline development, industrialization, and urbanization are evident. These activities have eliminated tidal marsh habitats, introduced non-native species, degraded water quality, and altered the hydrology and fish habitat of the action area. As a result, forage species that listed salmonids and green sturgeon depend on have been reduced, periodic sources of contaminants are introduced from the former Mare Island Naval Shipyard activities and stormwater runoff, and natural shoreline habitat areas have been eliminated.

With the project's proposed in-water construction window of July 1 to October 30, CCC and CV steelhead, CV spring-run Chinook salmon, and Sacramento River winter-run Chinook salmon are not anticipated to be in the action area during pile driving and other in-water construction activities. Juvenile, sub-adult and adult green sturgeon may be present in Mare Island Strait and exposed to the effects of construction of the project's waterside facilities.

Pile driving with an impact hammer is expected to occur for a total of 23.25 hours over a period of approximately 10 days between July 1 and October 30. Pile driving may adversely affect green sturgeon through elevated underwater sound levels and associated barotrauma. As stated above, NMFS conservatively predicts sound pressure levels of 206 dB peak should not occur at a distance greater than 13 feet from the 42, 36, 30, and 24-inch piles, but that sound pressure levels of 206 dB peak or greater could occur within 13 feet. Peak SPLs above 206 dB from a single strike can result in injuries and mortality due to the hemorrhage and rupture of internal organs. Death can be instantaneous, occur within minutes after exposure, or occur several days later. High sound pressure levels can also result in hearing damage to fish. However, NMFS expects very few green sturgeon will be subjected to peak SPLs in excess of 206 dB, because 1) the area of effect will be small (*e.g.*, restricted to the area immediately adjacent to the pile and bubble curtains will take up much of the space adjacent to the pile), 2) the diminished likelihood of green sturgeon presence, and 3) the duration of pile driving is limited to 23.25 hours total over 10 days. Sturgeon are likely to be startled from the area immediately adjacent to the pile prior to pile driving by activation of the bubble curtain and other construction disturbance.

In addition to the potential effects of single strike peak SPLs, the noise associated with accumulated SELs may result in injury or death to green sturgeon. As noted above, NMFS conservatively predicts that the maximum radial extent of accumulated SEL in excess of 187 dB

during installation of the diameter steel piles would extend no farther than 700 feet from the pile. NMFS expects the number of green sturgeon exposed to this effect to be small because the duration of pile driving is short, the area of effect is small, and the abundance of green sturgeon in the action area is low. In addition, exposed sturgeon would be unlikely to remain in the same location to experience the full duration of the pile driving due to tidal currents and behavioral movements. Few, if any, sturgeon are likely to remain stationary long enough to accumulate SPLs to levels which cause injury or mortality. Behavioral effects during pile driving may extend up to 7,065 feet from the project site. This noise may discourage green sturgeon from utilizing the action area during construction, but this area represents a small portion of the Mare Island Strait and will become available again once project construction is completed. NMFS expects that the temporary loss of use of this estuarine habitat by green sturgeon during construction will have insignificant impacts, because fish are expected to temporarily disperse to adjacent areas and these areas provide habitat of similar or higher value. Adjacent habitat areas also provide adequate carrying capacity to support individual sturgeon that are temporarily displaced during the construction period.

Turbidity, sediment, and contaminant effects associated with construction at the ferry maintenance facility will likely result in minor and temporary changes to fish behavior, and are not expected to adversely affect green sturgeon. NMFS does not anticipate any adverse effects to listed species or critical habitat from the inland portion of the proposed project, because the applicant will implement measures during construction and post-construction that prevent the runoff and discharge of pollutants from landside activities to the waters of Mare Island Strait.

Due to the proposed construction work window (July 1-October 30) adult and juvenile listed anadromous salmonids are not expected to be present in the action area and won't be affected by in-water construction activities. Due to the minor and temporary nature of impacts to water quality associated with the future operation of the facility, NMFS does not believe the project will appreciably diminish the numbers, reproduction, or distribution of the CCC and CV steelhead, CV spring-run Chinook salmon, or Sacramento River winter-run Chinook salmon.

Based on the above, a small number juvenile, sub-adult, and adult green sturgeon are expected to be adversely affected by the proposed action. Therefore, it is unlikely that the small potential loss of individuals as a result of the project will impact future adult returns, due to the large number of individual green sturgeon unaffected by the project compared to the small number of green sturgeon likely affected by the project. Due to relatively long life of adults, and their life history strategy of spawning every 3-5 years over an adult lifespan of as much as 40 years (Moyle 2002), the few individuals injured or killed during pile driving are likely to be replaced in subsequent generations of green sturgeon.

The project will affect designated critical habitat for CCC steelhead, Sacramento River winter-run Chinook salmon and southern DPS of North American green sturgeon in a portion of Mare Island Strait. Completion of the project will result in approximately 10,650 square feet of new overwater structures in Mare Island Strait. Overwater structures, such as docks and piers, can result in shading and impact to the growth of submerged aquatic vegetation. The proposed project's impact on shading are expected to be insignificant, because the new floating berths would be located 50 feet out from the quay wall where depths range between -15 and -40 feet

MLLW. These depths are too great to support eelgrass or other species of submerged aquatic vegetation that would be associated with prey species of green sturgeon and listed anadromous salmonids. Upon completion of the project shading by new overwater structures is expected to have only insignificant effects on PCEs of critical habitat for listed salmonids or green sturgeon.

Future operation of the facility will include ferry boats traveling to and from the berths on a frequent basis (estimated to occur up to 12 times per day). This vessel traffic is expected to disturb bottom sediments which, in turn, would generate increased levels of turbidity in the water column and may re-suspend contaminants lodged in bottom sediments. Noise associated with ferry boat traffic may startle fish, but is unlikely to adversely affect them. Both of these impacts are expected to be minor, localized, and limited to short periods of time during the arrival and departure of the ferry boats. Overall, the potential effects of the project are not expected to appreciably diminish the value of designated critical habitat.

Regarding future climate change effects in the action area, California could be subject to higher average summer air temperatures and lower total precipitation levels. The Sierra Nevada snow pack is likely to decrease by as much as 70 to 90 percent by the end of this century under the highest emission scenarios modeled. Reductions in the amount of snowfall and rainfall would reduce stream flow levels in Northern and Central Coastal rivers. Estuaries may also experience changes in productivity due to changes in freshwater flows, nutrient cycling, and sediment amounts. For this project, construction would be completed no later than 2014 and the above effects of climate change will not be detected within that time frame. The short-term effects of project construction will have completely elapsed prior to initiation of climate change effects. Since the effects to listed fish associated with the future operation of the ferry maintenance facility are insignificant or discountable, future climate change effects are not cumulative with the anticipated effects of this project.

IX. CONCLUSION

After reviewing the best available scientific and commercial data, the current status of listed salmonids and green sturgeon (CCC and CV steelhead, CV spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, and southern DPS green sturgeon), the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is NMFS' biological opinion that the proposed Vallejo-Baylink Ferry Maintenance Facility Project, in the City of Vallejo, Solano County, California is not likely to jeopardize the continued existence of threatened CCC and CV steelhead, threatened CV spring-run Chinook salmon, endangered Sacramento River winter-run Chinook salmon, and threatened southern DPS green sturgeon.

After reviewing the best available scientific and commercial data, the current status of critical habitat, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is NMFS' biological opinion that the proposed Vallejo-Baylink Ferry Maintenance Facility Project, in the City of Vallejo, Solano County, California is not likely to adversely modify or destroy designated critical habitat for CCC steelhead, Sacramento River winter-run Chinook salmon or southern DPS green sturgeon.

X. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by NMFS as an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by the applicant for the exemption in section 7(o)(2) to apply. The Corps has continuing duty to regulate the activity covered by this incidental take statement. If the Corps: (1) fails to assume and implement the terms and conditions, or (2) fails to require its designees to adhere to the terms and conditions of the incidental take statement, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the actions and its impact on the species to NMFS as specified in the incidental take statement (50 C.F.R. §402.14(I)(3)).

A. Amount or Extent of Take

NMFS anticipates that take of threatened southern DPS green sturgeon associated with the Vallejo-Baylink Ferry Maintenance Facility Project in the City of Vallejo, Solano County, California will be in the form of mortality and/or injury through temporary impacts from construction activities associated with pile driving. The number of green sturgeon that may be incidentally taken during activities at the Vallejo-Baylink Ferry Maintenance Facility Project is expected to be small. No take of listed anadromous salmonids is expected to occur.

Finding dead or injured fish will be difficult due to their small size in relation to the size of the action area, the difficulty in observing dead or injured fish in the waters of Mare Island Strait due to depth, lack of water clarity, and the presence of predators and scavengers such as birds. Therefore, NMFS will use the area of sound pressure wave impact extending into the water column from each pile, and the time period for pile driving as a surrogate for number of fish. For southern DPS green sturgeon, those fish located within 700 feet of the Vallejo-Baylink Ferry Maintenance Facility during the installation of the project's steel piles between July and October may be injured or killed. If project hydroacoustic monitoring indicates that sound pressure levels greater than 187 dB SEL (re: 1 $\mu\text{Pa}^2\text{-s}$) extend beyond 700 feet during the installation of any of the piles, the amount of incidental take may be exceeded. If project hydroacoustic monitoring indicates that sound pressure levels greater than 206 dB peak (re: 1 μPa) for a single strike extend beyond 13 feet from any pile, the amount of incidental take may be exceeded.

B. Effect of the Take

In the accompanying biological opinion, NMFS has determined that the anticipated take is not likely to jeopardize the continued existence of the southern DPS of North American green sturgeon. Incidental take is not anticipated for CCC steelhead, CV steelhead, CV spring-run Chinook salmon, or CV winter-run Chinook salmon.

C. Reasonable and Prudent Measures

NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the southern DPS of green sturgeon:

1. ensure the hydroacoustic monitoring plan is properly implemented and assists in the evaluation of project effects on green sturgeon; and
2. prepare and submit plans and reports regarding the construction of the proposed project and the results of the fisheries and hydroacoustic monitoring program.

D. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps and the applicant must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:
 - a. The permittee shall allow any NMFS employee(s) or any other person(s) designated by NMFS, to accompany field personnel to visit the project sites during construction activities described in this opinion.
 - b. The permittee shall implement the August 2011 hydroacoustic monitoring plan that includes underwater sound measurements at various distances and depths from pile driving operations.
 - c. The permittee shall make available to NMFS data from the hydroacoustic monitoring program on a real-time basis (*i.e.*, daily monitoring data should be accessible to NMFS upon request).
 - d. If any sturgeon are found dead or injured during visual observations, the biologist shall contact NMFS biologist Gary Stern by phone immediately at (707) 575-6060 or the NMFS North Central Coast Office at (707) 575-6050. All sturgeon mortalities shall be retained, placed in an appropriately-sized sealable plastic bag, labeled with the date and location of collection, fork length, and be frozen as soon as possible. Frozen samples shall be retained by the biologist until specific instructions are provided by NMFS. The biologist may not transfer biological

samples to anyone other than the NMFS North Central Coast Office without obtaining prior written approval from the NMFS North Central Coast Office, Supervisor of the Protected Resources Division. Any such transfer will be subject to such conditions as NMFS deems appropriate.

2. The following term and condition implements reasonable and prudent measure 3:
 - a. The Corps or permittee shall provide a written report to NMFS by January 15 of the year following construction of the project. The report shall be submitted to NMFS North Central Coast Office, Attention: Supervisor of Protected Resources Division, 777 Sonoma Avenue, Room 325, Santa Rosa, California, 95404-6528. The report shall contain, at a minimum, the following information:
 - i. **Construction related activities** -- The report shall include the dates construction began and was completed; a description of any and all measures taken to minimize effects on ESA-listed fish; and the number of fish killed or injured during the project action.
 - ii. **Hydroacoustic monitoring** -- The report shall include the a description of the methods used to monitor sound, the dates that hydroacoustic monitoring was conducted; the locations (depths and distance from point of impact) where monitoring was conducted; the total number of pile strikes per pile, total number of strikes per day, the interval between strikes, the peak/SPL, RMS and SEL per strike, and accumulated SEL per day for each hydroacoustic monitor deployed; and the number of fish killed or injured during the pile driving.

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C. Personal Communications Cited

Jeffrey Jahn, National Marine Fisheries Service (NMFS) Biologist, personal communication; March 2011.



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Chief, Regulatory Division
Army Corps of Engineers
U.S. Army Engineer District, San Francisco
1455 Market Street
San Francisco, CA 94103-1399

Subject: Section 7 Consultation for the Water Emergency Transportation Authority's Construction of the Ferry Maintenance Dock, Solano County, California (U.S. Army Corps of Engineers (Corps) File Number: 2006-302430).

Dear Ms. Hicks:

This letter is in response to the Corps' November 6, 2013, letter requesting to initiate formal consultation with the U.S. Fish and Wildlife Service's (Service) San Francisco Bay-Delta Fish and Wildlife Office (BDFWO) on the San Francisco Bay Water Emergency Transportation Authority's (WETA) Construction of a Ferry Maintenance Dock in the Mare Island Shipping Channel, in the City of Vallejo, Solano County, California. The BDFWO received your letter on November 20, 2013. At issue are the potential effects of the proposed project on the federally threatened delta smelt (*Hypomesus transpacificus*). You have also requested that this project be appended to the Service's 2004, *Formal Programmatic Consultation on the Issuance of Section 10 and 404 Permits for Projects with Relatively Small Effects on the Delta Smelt and its Critical Habitat within the Jurisdiction of the Sacramento Fish and Wildlife Office of the U.S. Fish and Wildlife Service, California (Programmatic)* (Service File Number: 1-1-04-F-0345). This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

This document represents the Service's biological opinion on the effects of the proposed project on delta smelt. The following sources of information were used to develop this biological opinion: (1) the Corps' November 6, 2013, initiation letter; (2) the North Bay Ferry Maintenance Facility Mitigation Monitoring Plan, June 2013 and revised December 2013; (3) telephone and email correspondence occurring between the applicant, the Corps and the Service beginning December 18, 2013 and ending January 31, 2014; (4) the Service's 2004 Programmatic; and (5) other information available to the Service.

BIOLOGICAL OPINION

Description of the Action

The proposed project includes the replacement of an existing ferry maintenance facility at a new location approximately 0.5-mile downstream for the Vallejo Ferry System. The new Facility will be owned and operated by WETA. The ferry system consists of a fleet of four vessels that serve routes between the Vallejo Ferry Terminal and the City of San Francisco's Ferry Plaza and Fisherman's wharf. The relocated maintenance facility will include an administration office, maintenance shops, fueling, and berthing to replace an existing insufficient facility northwest of the Building 165 project site. The project consists of landside and waterside improvements.

The new facility will provide for crewing, repairs, fueling, maintenance, vessel moorage, and storage functions of the existing Vallejo-Baylink Ferry System. Construction of the new maintenance facility is likely to take approximately one year. The in-water components of the project are anticipated to take 2 to 3 months for construction and would be limited to the period between August 1 and January 31. Construction is planned for 2014, but permitting issues may delay in-water construction to 2015. The new facility would be located on Mare Island across from the Vallejo Ferry Terminal. The waterside portion of the project will be adjacent to Waterfront Avenue, between 6th and 7th Avenue, in the City of Vallejo. The project would replace an existing maintenance facility located on Waterfront Avenue about a half mile upstream from the new project site at Building 477.

Landside Improvements

The project's inland components include relocation of administration office, installation of fencing and security system, utility improvements, installation of a fueling facility, construction of a 4,500 square-foot warehouse to be used for storage and mechanic shop, and placement of a 1250 kilowatt emergency generator to be housed in a sound enclosure. The proposed fueling system will expand the current system capacity by improving the diesel fuel transfer rate. The new maintenance facility would include the following storage facilities: (1) 48,000 gallons of diesel stored in four new 12,000 gallon above-ground tanks that will be located in below-grade vaults; (2) 2,000 gallons of clean lube oil that will be stored in an existing double-walled concrete tank with leak detection and relocated from existing facility; (3) 4,000 gallons of oily bilge water to be stored in new tanks located in below-grade vaults; (4) 4,000 gallons of dirty lube oil that will be stored in an existing double-walled concrete tank with leak detection and relocated from the existing facility; and (5) 6,000 gallons of urea stored in an existing steel tank and relocated from the existing facility.

Waterside Improvements

The proposed ferry maintenance facility would include four full-service berths (two maintenance and two mooring-only berths) for ferry boats. The berths will be composed of floating docks, fixed in position with guide piles and fender piles. All berths will have utility connections including fuel, potable water, sewage disposal, shore power, urea, bilge water, waste oil, lube oil,

and compressed air. The new facility would include lighting, power, a tool shed, ship's store shed, diver access platform, access gangway, security systems, and communication systems.

Construction of the new docks and access gangway at the maintenance facility will cover approximately 13,674 square feet (0.31 acre) of water surface, of which approximately 7,794 square feet (0.18 acre) will be new facilities; the remaining 5,880 square feet (0.13 acre) will consist of relocated facilities from the existing maintenance facility. The new facility will be used for overnight moorage, daily fueling, and light maintenance. The new facility (excluding the gangway) will be located approximately 50 feet away from the shoreline in water depths ranging between -15 and -40 feet mean lower low water (MLLW).

Approximately 38 piles are proposed which would displace 190 square feet (.004 acre) of bay mud. However, the final design would be determined by the contractor and therefore a 10 percent contingency plan has been developed in the effect the contractor determines a different pile configuration would be appropriate. The contingency plan would therefore increase the number of piles from 38 to 40 and increase the estimated fill from 190 to 210 square feet (.0048 acre). In addition, the project will include the removal of 122 creosote piles from two locations totaling 16,275 square feet (0.37 acres) within Mare Island Strait and remove decking from an abandoned pier and to remove 1,550 square feet (0.04 acre) of decking from an abandoned pier.

Conservation Measures

The applicant proposes to implement the following conservation measures in order to minimize adverse effects to delta smelt:

- 1) All in-water work will occur within the West Zone delta smelt work window of August 1 through January 31;
- 2) The applicant proposes to purchase 0.55 acres from a conservation bank in an effort to reduce loss of habitat for native fish;
- 3) The project will implement a water pollution control/spill contingency plan;
- 4) 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 are not performed at full force, but at a significantly reduced force that slowly builds to full force over several strikes;
- 5) Unconfined bubble curtains will be used during the installation of all steel piles to reduce noise levels;
- 6) The applicant will implement hydro-acoustic monitoring during pile driving activities;
- 7) Pile removal will include the following:
 - a. A vibratory method or direct pull method will be used to remove timber piles. Under direct pull, each piling would be wrapped with a choker cable or chain that is attached at the top to a crane. The crane then pulls the pile directly upward, removing the pile from the sediment.
 - b. Complete removal is preferred over partial removal. Piles that cannot be completely removed will be cut a minimum of one foot below the mud line.
 - c. Sediment disturbance will be minimized.

- d. A floating boom with absorbent pads will be used to capture debris suspended during removal.
- e. All piles will be disposed of at a proper landfill.

Action Area

The action area is defined in 50 CFR § 402.02, as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” For the purposes of the effects analysis, the action area includes both an upland area on Mare Island and an estuarine area in Mare Island Strait. The upland portion of the project will occur in an area of approximately 8,100 square feet (0.19 acre) on Mare Island adjacent to Waterfront Avenue, between 6th and 7th avenues. The aquatic portion of the action area is within Mare Island Strait and includes 13,674 square feet (0.31 acre) of water surface for the new facility, 5,880 square feet (0.13 acre) of water surface of the existing facility, and 1,550 square feet (0.04 acre) of decking to be removed from an abandoned pier, in addition, 0.55 acres will be compensated for habitat loss at an approved conservation bank. Two site locations have been selected for pile removal totaling 16,275 square feet (0.37 acres); the North Dolphin site and the Pier site. The North Dolphin site is located downstream of the project impact site and contains three dolphin piles, totaling 30 individual piles and is located approximately 350 to 400 feet from the eastern shore. The Pier Site is located downstream from the North Dolphin Site and includes the removal of individual piles that range from the shoreline to approximately 200 feet offshore. The total aquatic action area totals 0.85 acre.

Status of the Species

Delta Smelt

The Status of the Species has been updated since the issuance of the Programmatic. Please refer to page 6 of the 2010 delta smelt 5 year review for a current Status of the Species. An electronic copy is available at http://ecos.fws.gov/docs/five_year_review/doc3570.pdf.

Environmental Baseline

The proposed project is located off the westernmost shore along the Mare Island Strait in Vallejo, Solano County, California. Mare Island Strait is the lowermost reach of the Napa River, and it connects the Napa River with San Pablo Bay. The Napa River watershed is the largest watershed in the northern San Francisco Bay region, with 48 major tributaries, draining an area of approximately 426 miles. During particularly wet water years the Napa River is known to provide spawning and juvenile rearing habitat for delta smelt, when the Sacramento and San Joaquin Rivers have increased freshwater outflow. During drought years, it is less likely that delta smelt have access to the Mare Island Strait and therefore the Napa River because of reduced outflow and increased salinity. Mare Island Strait is situated outside of designated delta smelt critical habitat.

Effects of the Action

In addition to the effects analyzed within the programmatic, the proposed project may result in effects to delta smelt caused by the sound and turbidity generated from the pile driving activities and removal of the old creosote piles. These effects are temporary in nature and will be further reduced through the implementation of the proposed conservation measures listed above. The overall in-water area of the project that adversely affects delta smelt totals approximately 0.31 acre of aquatic habitat which includes 0.18 acre of new facilities and 0.13 acre of relocated activities. The project will increase the area of shaded habitat within the Napa River, and as such the project proponent has proposed to compensate for the loss of habitat at a Service-approved conservation bank at a 3:1 ratio. The new facility (excluding the gangway) will be located approximately 50 feet away from the shoreline in water depths ranging between -15 and -40 MLLW and therefore will not incur a loss of delta smelt shallow water habitat.

The removal of existing pilings will aid in reducing protective cover for predatory fish and therefore will potentially benefit delta smelt. The proposed habitat preservation, creation, and enhancement will minimize the effects of habitat loss of delta smelt habitat. This land will be protected and managed for the conservation of the species in perpetuity. The protected lands will provide habitat for breeding feeding or sheltering commensurate with or better than habitat lost as a result of the project. These lands will help maintain the geographic distribution of the species and will contribute to the recovery of the species by increasing the amount of habitat that is secure from development threats and the other factors that threaten the species that can be addressed by habitat protection and management.

Construction activities associated with the new facility are expected to temporarily affect delta smelt, should they be in the area, through underwater noise during pile driving and degradation of water quality. Construction of the new maintenance facility is likely to take approximately one year. The in-water components of the project are anticipated to take 2 to 3 months for construction and would be limited to the period between August 1 and January 31. Construction is planned for 2014, but permitting issues may delay construction to 2015. When completed, the operation of ferry boats to and from the new facility will affect delta smelt through temporary increases in turbidity and noise when they are present.

With the projects proposed in-water construction window of August 1 through January 31, adult and juvenile delta smelt are not anticipated to be in the action area during in-water construction activities, particularly during dry water years. The Service does not anticipate any adverse effects to delta smelt from the landside portion of the proposed project, because the applicant will implement measures (i.e., accidental spill plan, fuel tanks located in water-tight underground vaults, and sediment containment with berms and dikes) that prevent the runoff and discharge of pollutants from landside activities to the waters of Mare Island Strait. Based on the project description above, this project will not result in loss of shallow water habitat and sustains relatively small effects to delta smelt and therefore, meets the requirements to be appended to the Programmatic.

Critical Habitat

The project is located outside of delta smelt critical habitat and as such will not affect critical habitat.

Conclusion

The proposed project, as described, fits within the parameters of the level of effects analyzed in the Programmatic and is not likely to jeopardize the continued existence of this listed species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

Amount or Extent of Take

The Service anticipates that incidental take of delta smelt in the form of harassment, harm, or mortality may occur. The Service anticipates that take of delta smelt will be difficult to detect and quantify and therefore it is not possible to provide precise numbers of delta smelt that could

be harassed, harmed, or killed from this project to be appended to the Programmatic; however, low or no mortality is anticipated because of implementation of the observed delta smelt work window and the additional conservation measures proposed by the applicant.

The total project area to include the new facility, existing facility, pier decking removal site and the two pile removal sites totals approximately 0.85 acre of aquatic habitat. The Service therefore concludes that up to 0.85 acre of aquatic habitat may be temporarily affected by project construction; any delta smelt inhabiting the area may be harassed or harmed by the temporary disturbance of aquatic habitat. Accordingly, the Service is quantifying take incidental to the project as all delta smelt located within the 0.85 acre of aquatic habitat that will be temporarily affected by project construction. The Service anticipates that take in the form of harassment and harm to smelt will be low due to project timing and location outside of delta smelt critical habitat as well as the implementation of the proposed conservation measures.

Upon implementation of the reasonable and prudent measures and proposed conservation measures stated below as well as within the Programmatic, incidental take of delta smelt associated with this project in the form of harassment or harm the Corps and the applicant will become exempt from the prohibitions described under section 9 of the Act.

Effect of the Take

In the accompanying biological opinion, the Service determined that the level of anticipated take is not likely to result in jeopardy to the delta smelt.

Reasonable and Prudent Measures

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize impacts of incidental take of delta smelt:

1. The Corps and the applicant shall minimize the adverse effects to the delta smelt.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Corps shall ensure the applicant complies with the following terms and conditions, which implement the reasonable and prudent measure, described above and outline required reporting/monitoring requirements. These Terms and Conditions are nondiscretionary.

The following Terms and Conditions implement the Reasonable and Prudent Measure:

1. The applicant shall fully implement the proposed project, including the Conservation measures as described in this biological opinion and the Programmatic.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed WETA Construction of a Ferry Maintenance Dock in the Mare Island Shipping Channel. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any additional take will not be exempt from the prohibitions of section 9 of the Act, pending reinitiation.

Please address any questions or concerns regarding this response to Tiffany Heitz, Fish and Wildlife Biologist, at Tiffany_Heitz@fws.gov or (916) 930-5627 or to Kim Squires, Section 7 Coordinator, at Kim_Squires@fws.gov or (916) 930-5634. Please refer to Service file number 08FBDT00-2014-F-0014 in any future correspondence.

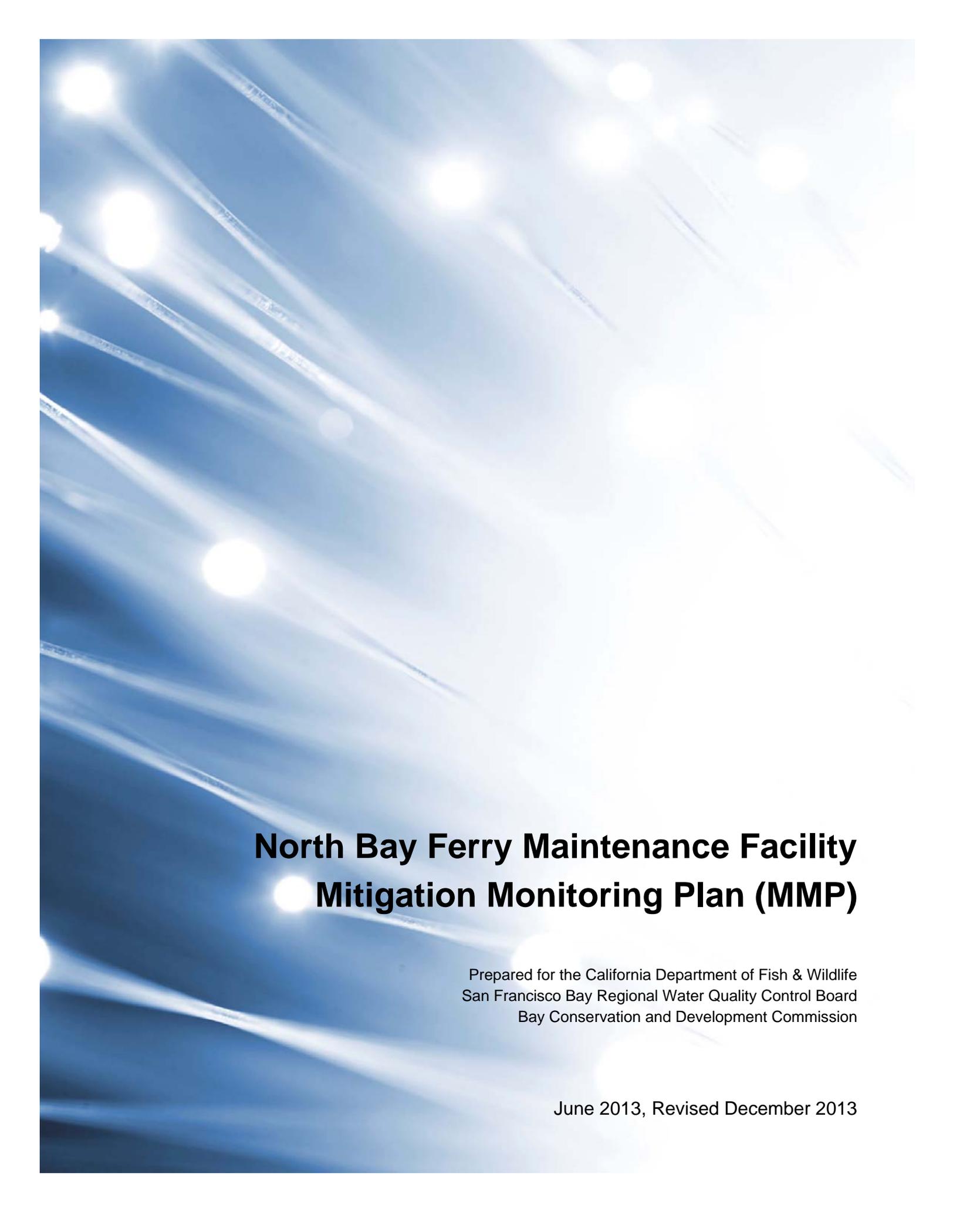
Sincerely,

A handwritten signature in black ink that reads "K. S. Turner". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Kim S. Turner
Assistant Field Supervisor

cc:

Chad Mason, WETA, Pier 9 Suite #111, The Embarcadero, San Francisco, CA 94111
Erica Spinelli, Navy Base Realignment and Closure (BRAC) Program Management Office West,
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North Bay Ferry Maintenance Facility Mitigation Monitoring Plan (MMP)

Prepared for the California Department of Fish & Wildlife
San Francisco Bay Regional Water Quality Control Board
Bay Conservation and Development Commission

June 2013, Revised December 2013

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1. Introduction

1.1 Background Information

This mitigation and monitoring plan (MMP) identifies proposed actions to offset potential impacts associated with the relocation of the North Bay Ferry Maintenance Facility located on Mare Island in Vallejo, California. Details on potential impacts and potentially affected state-listed species (longfin smelt and delta smelt) are included in an Incidental Take Permit (ITP) application, recently revised and resubmitted to CDFW in November 2012 (GHD 2012) per the California Endangered Species Act (CESA). This MMP is intended to fulfill mitigatory requirements of the following state agencies: San Francisco Bay Regional Water Quality Control Board (RWQCB), the California Department of Fish and Wildlife (CDFW), and the San Francisco Bay Conservation and Development Commission (BCDC).

The U. S. Army Corp of Engineers (USACE) is planning to authorize the proposed project, pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 through issuance of a Letter of Permission (LOP). Section 7 consultation under the Federal Endangered Species Act (ESA) was completed with National Marine Fisheries Service (NMFS), with the issuance of a Biological Opinion (BO) on April 10, 2012 (NMFS 2012). NMFS authorized the project to be constructed within specified conditions and restrictions described in the BO. Compensatory mitigation is not being required by federal agencies including the USACE, or by NMFS.

1.2 Contact Information

The applicant is:

Water Emergency Transportation Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111.

The contact person is:

Chad Mason, Planner/Analyst
(415) 364-1745

1.3 Project Summary

The North Bay Ferry Maintenance Facility Project (Project) is being proposed by the Water Emergency Transportation Authority (on the Mare Island Strait in Vallejo, Solano County, California (see Figure 1, Appendix A). The proposed Project would replace an existing maintenance facility at a new location approximately 0.5-mile downstream, adjacent to the intersection of Waterfront Avenue and Ferry Street. The Project will provide for crewing, repairs, fuelling, maintenance, vessel moorage, and storage functions, and would also accommodate limited passenger service on regularly scheduled arrivals and departures between Mare Island and the Vallejo Ferry Terminal (no new passenger service routes would be added as a result of the Project).

The waterside improvements would cover approximately 13,674 square feet of water surface, of which approximately 7,794 square feet would be new facilities, with the remaining 5,880 consisting of relocated facilities from the existing maintenance facility. The 38 piles currently proposed as part of the Project would displace 190 square feet (.0044 acre) of bay mud. However, the final Project design would be determined by the contractor, therefore, a 10 percent contingency plan has been

developed in the event the contractor determines a different pile configuration would be appropriate. Including the 10 percent contingency plan would increase the estimated fill to 210 square feet (.0048 acre). For the purposes of determining mitigation requirements, the 10 percent contingency has been translated to two additional piles. Therefore, the mitigation proposed in this MMP assumes the Project impact would be 210 square feet from 40 piles.

This MMP proposes a mix of mitigation to accommodate needs of the various agencies with jurisdiction over the project impact site. WETA proposes to remove 122 creosote piles from two locations within Mare Island Strait, remove 1,550 square feet of decking from an abandoned pier, remove additional bay fill equivalent to 30 square feet, and purchase 0.05 acre of credit from a mitigation bank, to mitigate for bay fill impacts. In addition, WETA proposes to purchase 0.5 acre of credit from a wetland mitigation bank to mitigate for hydro-acoustic impacts. Details of the proposed mitigation are described below.

2. Objectives

The mitigation component of the project is intended to offset potential impacts to Waters of the State and to the state-listed longfin smelt (*Spirinchus thalyichthys*) and delta smelt (*Hypomesus transpacificus*). The impacts are related to bay fill and hydro-acoustics associated with the installation of project piles.

The proposed mitigation would re-establish estuary habitat by removing old creosote-laden piles from several locations near the project impact site. The removal of creosote piles will have water quality benefits through reduction of a source of water contamination and would benefit not only the mitigation area but the greater Mare Island Strait and San Francisco Bay. The report *Removal of Creosote-Treated Pilings and Structures from San Francisco Bay* addresses the removal of creosote-treated piers and dilapidated maritime facilities as a possible restoration focus for San Francisco Bay. The report states “removal of dilapidated pilings could mitigate the adverse effects of other environmental threats and advance long-term goals for management and restoration of subtidal habitats in San Francisco Bay.” In addition, one of the pile removal locations proposed in this MMP is identified as an appropriate pile removal project in the mapping and inventory of creosote-treated piles within the San Francisco Bay, while all locations proposed herein are within one of four locations designated as a “hot spot” due to the high density of piles within the area.

The proposed mitigation also includes the removal of an above-water, dilapidated structure along the shoreline, and removal of bay fill along the shoreline in front of the pier site, in accordance with the objectives of BCDC and The Bay Plan. Finally, the proposed mitigation includes purchase of 0.5 acre of mitigation credit at a wetland mitigation bank to compensate for potential hydro-acoustic impacts to state-listed fish species during pile driving, and 0.05 acre of mitigation credit for bay fill impacts to fulfill the requirements of CDFW.

3. Site Selection

Areas in the vicinity of the proposed project were evaluated for potential use for pile removal as part of the mitigation package for the proposed project.

Two sites have been selected for pile removal, and are referred to as the North Dolphin Site and the Pier Site (see Figure 2, Appendix A). In addition, there are seven piles at the project impact site that will be removed to accommodate the relocated Ferry Maintenance Facility. To meet the mitigatory requirement of 3:1 (three piles removed for each pile installed), as identified in the

approved Streambed Alteration Agreement and that will be required as part of the Water Quality Certification, the Project would need to remove 120 piles, or equivalent debris from the bay floor. Collectively, the mitigation sites include 122 piles, with associated apparatus (some dolphin piles are draped in rope or cable, one has an anchor), that are proposed for removal. Additionally, the Pier Site has approximately 1,550 square feet of decking associated with an abandoned pier that also will be removed. The two selected sites are in the Mare Island Strait within one mile downstream of the proposed project impact (Figure 2, Appendix A). Each mitigation site includes a variety of piles or pile groupings for removal, as summarized in Table 1, and further described below.

In the June 2013 Draft MMP there was a third pile site, with an additional 46 piles, identified for removal. This location has since been identified as infeasible for removal. Therefore, WETA has committed to removing an additional 8 piles at the Pier Site and 30 square feet of bay fill adjacent to the Pier Site (P1 on Figure 2). This may take the form of removal of tires, scrap metal, and other debris at the Pier Site (see Appendix B, Photo 5 and Photo 6).

The Liberty Island Conservation Bank has been identified as a viable site for purchase of 0.55 acre of mitigation credit to compensate for bay fill impacts and potential hydro-acoustic impacts to delta smelt, per the Streambed Alteration Agreement mitigation requirements by CDFW.

North Dolphin Site. This site is downstream of the project impact site, and near the eastern shore of Mare Island Strait. The water depth is approximately 10 feet. The site location is shown on Figure 3 in Appendix A. The North Dolphin Pile Site contains three dolphin piles (DP-8, DP-9, and DP-10), totaling 30 individual piles, and is located approximately 350 feet to 400 feet from the eastern shore (see photo 1 in Appendix B).

Pier Site. Located downstream from the North Dolphin Site, this area includes piles close to the eastern shore as well as in the channel margins. The water depth ranges from approximately 2 to 12 feet. The location is shown on Figure 4 in Appendix A. The Pier Site includes individual piles (PG-1) and dolphin piles (DP-1 through DP-7) that range from the shoreline to approximately 200 feet off shore (see Appendix B, Photo 2 and Photo 3). Additionally, the Pier Site has 1,550 square feet of decking associated with an abandoned pier that will be removed. The structure is dilapidated, with pier debris falling into the strait. The site is located near an existing upland equipment and material staging area (some aerial photos show barges docked at the site, these barges are no longer there). A stormwater drain is immediately south of the pier, and a sanitation outfall is immediately south of the stormwater drain. Both structures extend off the eastern shore of the strait and can be seen in aerial photography where there is a low tide. The piles associated with these structures are not included in the pile removal plan described herein. In addition, there are six steel dolphin piles along the channel side of the Pier Site. These also are not included in the pile removal plan as they are working assets of the City.

Debris Removal. There is debris, including tires, concrete blocks, metal piping, plywood, timbers, asphalt, along the shoreline and in the water adjacent to the Pier Site. Debris equaling 30 square feet will be removed from this site. This work will need to be undertaken carefully. Some concrete chunks have become part of the fabric of the shoreline, serving as erosion control and cover for small organisms. Only those items that would potentially be harmful to the aquatic environment will be removed (ex: tires, plastic, metals).

Project Site. There are seven piles along the quay wall at the project impact site that will be removed to accommodate the relocated Ferry Maintenance Facility (see photo 4 in Appendix B). The depth to bay mud at this point is eight to ten feet.

Liberty Island Conservation Bank. This mitigation bank has been identified as viable as it is approved for use for compensation for impacts to delta smelt (among other species and habitats) and has credits available. The site is 186 acres located on the southern Yolo Bypass within the Sacramento/San Joaquin Delta. The site has a service area that includes the entire legal Delta including portions of Yolo, Solano, Sacramento, San Joaquin, Contra Costa, and Alameda counties. CDFW indicated selection of this site would be adequate compensation for potential hydro-acoustic impacts to state-listed fish species. Use of this bank does not fulfill the requirements of either RWQCB or BCDC as it is located outside of the San Francisco Bay and outside the watershed, thus outside of both agencies jurisdiction.

Table 1: Pile Removal

Map ID	Description	Number of Piles
Project Site	7 Individual wood piles along quay wall removed as part of Project	7*
P1	Timber Pier (Complete pier [piles, bent caps, stringers & deteriorated decking])	34
DP-1	Dolphin Pile (3 individual wood piles bound with steel cable)	3*
DP-2	Dolphin Pile (3 individual wood piles bound with steel cable)	3*
DP-3	Dolphin Pile (2 individual wood piles)	2*
DP-4	Dolphin Pile (3 individual wood piles bound with steel cable)	3
DP-5	Dolphin Pile (5 individual wood piles)	5
DP-6	Dolphin Pile (7 individual wood piles bound with steel cable)	7
DP-7	Dolphin Pile (7 individual wood piles bound with steel cable)	7
DP-8	Dolphin Pile (6 individual wood piles)	6*
DP-9	Dolphin Pile (14 individual wood piles with top structure)	14*
DP-10	Dolphin Pile (10 individual wood piles draped with rope/anchor)	10*
PG-1	13 individual wood piles	13
PG-2	8 individual wood piles	8
--	Debris removal equal to 30 square feet (equivalent to 38 12-inch piles)	38 (equiv.)
Total Piles to be Removed (or equivalent bay fill)		160
Piles Installed as Part of Project		40⁽¹⁾
Pile Mitigation Needed at 3:1		120

Notes:

Piles use the following nomenclature for Map ID on Figures 3 and 4:

P = Pier

DP = Dolphin Pile

PG = Pile Grouping

* = All piles, including the pier, qualify for Regional Board and BCDC mitigation. Only piles noted with an asterisk qualify for CDFW mitigation (45 piles).

¹ Thirty-eight piles are in the current design; 40 includes a 10% contingency.

4. Site Protection Instrument

Proposed mitigation areas are on the east shore of the Mare Island Strait and owned by the City of Vallejo. WETA is currently working with the City of Vallejo to receive written approval and concurrence for removal of the piles. The sites would be protected by the USACE as waters of the U.S. under the Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899, and by the RWQCB as waters of the State under Section 401 of the CWA. If any additional modifications to the site were ever proposed, permitting would be required to authorize such activities.

The Liberty Island Conservation Bank is required to be protected in perpetuity based on permitting for the site and authorization to sell mitigation credits.

5. Baseline Information

5.1 Mitigation Project Area

Mare Island Strait is a tidally influenced navigable water of the U.S., is the lowermost reach of the Napa River, and connects the Napa River with San Pablo Bay. Carquinez Strait separates San Pablo Bay from Suisun Bay to the east, which leads to the Sacramento-San Joaquin Delta. The Napa River watershed is the largest watershed in the northern San Francisco Bay region, with 48 major tributaries, and draining an area of approximately 426 miles. The Napa River watershed provides spawning and juvenile rearing habitat for a number of sensitive aquatic species.

The Mare Island and Carquinez straits are characterized as estuarine habitats. These straits provide habitat for aquatic species and serve as passage routes for several anadromous fish species, such as Chinook salmon, steelhead, striped bass (*Morone saxatilis*), starry flounder (*Platichthys stellatus*), sturgeon (*Acipenser* spp.), and lamprey (*Lampetra* spp.). These fishes migrate to and from spawning areas farther upstream in the Napa and Sacramento Rivers and associated tributaries.

Mare Island Strait is part of the San Francisco Bay estuary. The San Francisco Bay/Delta estuary is the largest estuary on the Pacific coast of North and South America. Located about halfway up the California coast from the Mexican border, it is the natural exit point for 60 percent of California's runoff from tributary rivers and streams draining 40 percent of California's surface area. California's two largest rivers, the Sacramento and San Joaquin, merge to form the Delta and estuary. The confluence of the Sacramento and San Joaquin rivers at the Sacramento-San Joaquin Delta is southeast of the project area. These rivers drain California's Central Valley, consisting of parts of the Sierra Nevada and Cascade mountains, and merge to form the largest estuary on the west coast of North America. The freshwater runoff from the Delta flows seaward, mixing with ocean water through Suisun Bay, San Pablo Bay, and lastly San Francisco Bay. San Francisco Bay empties into the Pacific Ocean through the Golden Gate.

The climate in the area is Mediterranean, with most precipitation falling in winter and spring as rain throughout the Central Valley and the San Francisco Bay Area, and as snow in the Sierra Nevada and Cascades. The freshwater outflow pattern is seasonal with highest outflow occurring in winter and spring. In summer, freshwater flow into San Francisco Bay is controlled mainly by water released from Central Valley reservoirs.

The project vicinity includes shoreline and open water areas in the Mare Island Strait. Open water areas are influenced by freshwater discharge from the Napa River, surface wave energy, and tide-

generated current. Benthic habitat substrate in the area is primarily composed of fine-grain silt and clay. The areas near the pile removal sites are unvegetated and eel grass has not been mapped as present in this area.

The shoreline of the Mare Island Strait in the project area has been entirely modified by the construction of piers, wharves, bulkheads, and fill. Within the project area in Mare Island Strait, the changes of shoreline development, industrialization, and urbanization are evident. These activities can eliminate tidal marsh habitats, degrade water quality, and alter the hydrology and fish habitat of the area. As a result, periodic sources of contaminants are introduced from area sources such as the former Mare Island Naval Shipyard, derelict creosote piles, and stormwater runoff. Natural shoreline habitat areas have been drastically reduced in the project area.

5.2 Status of Listed Species in the Project Areas

This document addresses two species listed under the California Endangered Species Act (CESA): The longfin smelt and the delta smelt. The latter species is also listed at the federal level. It and other federally protected species are addressed in greater detail in a Biological Assessment and a Biological Opinion previously prepared for the project (NMFS 2012). The longfin smelt is described in detail in an Incidental Take Permit Application prepared for CDFW (GHD 2012). Habitat requirements of the two species are very briefly summarized here.

Longfin smelt (*Spirinchus thalyichthys*)

Information in the following discussion is from USFWS (2012). The longfin smelt is a pelagic species; it occurs in open water in the water column, away from the bottom and away from the shore. Most juveniles of the Bay-Delta population reportedly spend the first year of life in Suisun Bay or Marsh, migrating into San Francisco Bay and nearby coastal waters after the first winter, and returning upstream in late fall or winter of the second year. Movements may be in part related to water temperatures, or to follow rich planktonic food sources. Copepods are thought to be the primary food source for juveniles, with larger individuals preying on small crustaceans.

The longfin smelt is known to enter the lower part of the Napa River. Because of seasonal and life stage movements, seasonal variation in local presence and abundance is likely.

The longfin smelt is listed as threatened by the State of California. The Bay-Delta population has been determined by USFWS to meet criteria for a Distinct Population Segment (DPS), and as of April 2012 a petition for federal listing has been found potentially warranted, but precluded at this time by other actions. Thus the Bay-Delta DPS of the longfin smelt is presently a candidate for federal listing. The greatest threat to the DPS is believed to be reduced freshwater input.

Delta smelt (*Hypomesus transpacificus*)

The delta smelt was listed as federally threatened on March 5, 1993 [58 FR 12854] and on April 7, 2010 found that reclassification to endangered is warranted but precluded at this time [75 FR 17667]. The species was listed as threatened under the CESA in 1993 and reclassified to state endangered in 2010.

Delta smelt are tolerant of a range of salinities, but generally prefer waters with less than 10-12 parts per thousand salinity. Spawning is believed to occur in the upper Delta from late January through late June or early July. Larvae are most abundant from mid-April through May. Several weeks later they move downstream to low salinity areas, and then in beginning September or October gradually migrate back upstream to freshwater spawning areas (Underwood 2010). The lifespan is one or two years.

Threats to the delta smelt include reduced freshwater flows, interruption of sediment transport by upstream impoundments, direct entrainment by water diversion activities or power plants, contaminants, and predation or competition by non-native species.

Presence in the lower Napa River is known and is believed to be highly variable between wet and dry years. There is a possibility that the species could be present in the project area during the summer-fall work window (CDFG 2012).

6. Determination of Credits

The applicant has agreed to mitigate impacts associated with pile installation at a ratio of 3:1; for each project pile installed, three piles, or equivalent debris, will be removed to re-established aquatic habitat. Shading and the floating fill associated with the new project will be compensated for through the 3:1 pile removal ratio and removal of a 1,550 square-foot abandoned pier. To mitigate hydro-acoustic impacts during construction, 0.5-acre of credit will be purchased at a mitigation bank. In addition, to meet the requirements of CDFW, an additional 0.05 credit will be purchased to compensate for 210 square feet of fill impacts. The purchase of the additional 0.05 credit equates to a 10:1 mitigation ratio, for above the 3:1 ratio required in the Streambed Alteration Agreement.

7. Mitigation Work Plan

7.1 Pile Removal Methods and BMPs

The following methods and Best Management Practices (BMPs) have been developed by Washington State DNR for removal of derelict creosote-treated piles, and similar methods and BMPs may be appropriate for and have been required in San Francisco Bay by BCDC (San Francisco Estuary Institute, 2010). The project will be implemented following these recommendations. All work is expected to occur prior to completion of the relocated Ferry Maintenance Facility.

- A vibratory method or direct pull method will be used to remove the timber piles. Under direct pull, each piling would be wrapped with a choker cable or chain that is attached at the top to a crane. The crane then pulls the pile directly upward, removing the pile from the sediment.
- Complete removal is preferred over partial removal. Piles that cannot be completely removed will be cut a minimum of one foot below the mud line.
- Sediment disturbance will be minimized.
- A floating boom with absorbent pads will be used to capture debris suspended during removal.
- All piles and debris will be disposed of at a proper landfill.

7.2 Measures to Protect Listed Species

The following construction measures are required per the Biological Opinion (NMFS 2012) regarding efforts to minimize impacts to federally-listed fish species and critical habitat that may occur in the project area during in-water work activities. These measures are applicable for protection of state-listed fish species as well:

- In-water work will occur within the work window of July 1 and October 30 (as allowed in the Streambed Alteration Agreement).
- 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 are not

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.
- The applicant will implement a NMFS-approved hydro-acoustic monitoring plan. This plan will provide details on the sound attenuation system and the methods used to monitor and verify sound levels during pile driving activities. The sound monitoring results will be made available to NMFS.
- The applicant will prepare and implement an Industrial Storm Water Pollution Prevention Plan, which will specify material handling and storage, and specify measures to collect and convey storm water runoff. All underground tanks will be installed in water tight vaults and fuel tanks will be equipped with leak detection alarms.

In an effort to avoid and minimize impacts to fish that may occur during the inland construction and demolition activities, the applicant proposes to:

- 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 Department of Toxic Substances Control;
- Manage accidental spills via the Accidental Spill and Discharge Response Plan prepared in accordance with the San Francisco Bay Regional Water Quality Control Board's Contingency Planning and Notification Requirements for Accidental Spills and Discharges;
- Manage stormwater run-off via implementation of a Stormwater Pollution Prevention Program; and
- During ferry facility operation, the owner will implement an Industrial Stormwater Prevention Pollution Plan; and continue to operate in full accordance with the U.S. Environmental Protection Agency vessel general permit.

The Streambed Alteration Agreement includes the following required monitoring activities:

- All temporary and permanent pile driving within 10 meters of the wetted channel shall be monitored (peak, rms, and SEL). Variations in substrate, water depth and pile driving intensity may increase peak SELs above lethal levels and monitoring will allow the operator to modify pile driving activities and effectively implement appropriate minimization measures. Hydroacoustic data shall be submitted to DFG every other Monday, and shall identify incidents when peak SEL exceeds 187 dB. This data shall be submitted via email to Suzanne.Gilmore@wildlife.ca.gov.
- The Permittee shall monitor appropriate implementation of hydroacoustic minimization methods daily and shall provide DFG a written log on a biweekly basis. The written log shall be sent to DFG every other Monday via email to Suzanne.Gilmore@wildlife.ca.gov.
- Prior to commencement of work within the waterway zone, the Permittee shall photograph the project site from a designated photo-station. Upon completion of work activities, the Permittee shall photograph the project site. Labeled copies of photographs shall be sent to DFG within 30 days of completion of the project. Submit to DFG at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG.
- The Permittee shall provide DFG with a biweekly status report on all activities authorized by this Agreement. The status report shall list the schedule of events (beginning dates, work

in progress, and completion dates). The status report shall be submitted to DFG every other Monday until the list of authorized activities is complete or there are scheduled periods of inactivity. The status report shall be sent via email transmittal to Suzanne.Gilmore@wildlife.ca.gov.

8. Maintenance Plan

No maintenance is anticipated unless the project fails to meet the performance standards identified below, except for periodic removal of debris (if any) that may collect within the mitigation sites. As described below, the site will be monitored immediately post-construction and one year later.

9. Performance Standards

Because mitigation consists of removal of piles from permanently inundated and unvegetated areas, performance standards are relatively simple. At the completion of construction and one year after completion of construction, pile removal areas will consist of natural substrate with no wood, metal, or other pile materials or other anthropogenic debris visible at the surface. This performance standard excludes the piles and related structures to be left in place at the Pier Site where piles associated with, or close to, the existing outfall and stormwater drain are not included in the mitigation plan.

10. Monitoring Requirements

The mitigation areas will be monitored at the completion of construction and one year after completion of construction. During each monitoring event each of the pile removal locations will be visited and a determination made whether or not any piling materials or any other anthropogenic debris is present at the location. Topography, substrate type, and presence or absence of anthropogenic debris will be documented for each pile removal location.

11. Long-term Management Plan

Long-term management is not anticipated, since there are no revegetation requirements and substrate will be subject to natural ecological processes such as tidal transport of sediment.

12. Adaptive Management Plan

Adaptive management would become necessary only in the event that performance standards are not met. If adaptive management is determined to be necessary, a meeting shall be scheduled with CDFW and any other relevant resource agencies to identify appropriate actions.

13. Financial Assurances

Because all mitigation work and purchase of credits is expected to be complete before associated impacts of new ferry terminal construction occur, financial assurances may not be needed. However, if mitigation activities are delayed for any reason, then the applicant will post a performance bond or similar instrument acceptable to the resource agencies to ensure that mitigation activities are completed per this MMP.

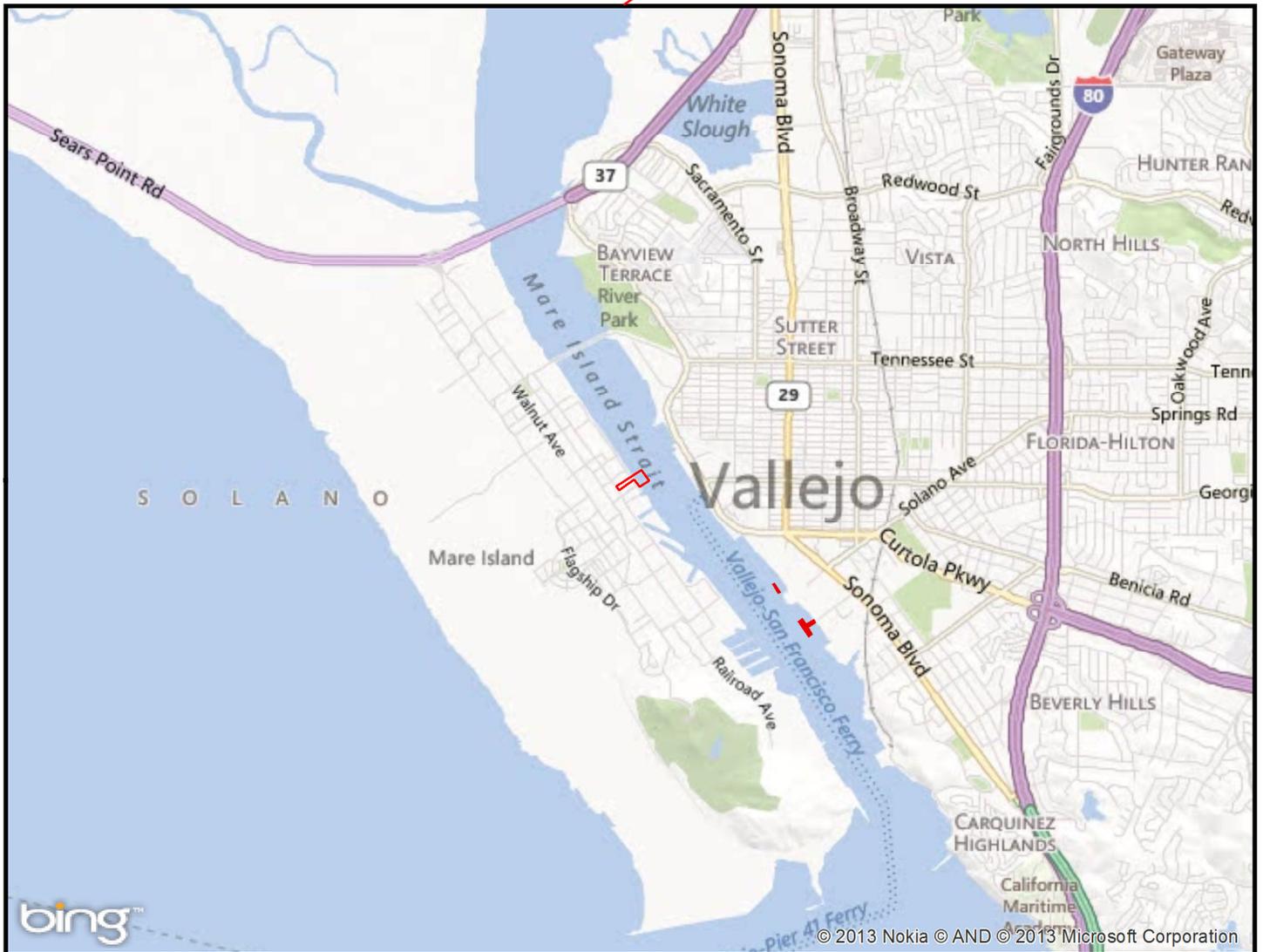
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Appendices

Appendix A

Figures



LEGEND

- Proposed Ferry Maintenance Facility Site
- Mitigation Sites

Paper Size 8.5" x 11" (ANSI A)
 0 3,000 6,000
 Feet
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California II FIPS 0402 Feet



Water Emergency Transportation Authority
 Vallejo Ferry Maintenance Facility

Job Number 8410386
 Revision 1
 Date 11 Oct 2013

Vicinity Map

Figure 1



LEGEND

-  North Dolphin Pile Site
-  Pier Site



Water Emergency Transportation Authority
Vallejo Ferry Maintenance Facility

Job Number	8410386
Revision	1
Date	10 October 2013

Mitigation Plan

Figure 2

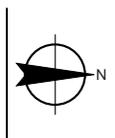


Mare Island Strait

DP-10

DP-9

DP-8



LEGEND
DP = Dolphin Pile

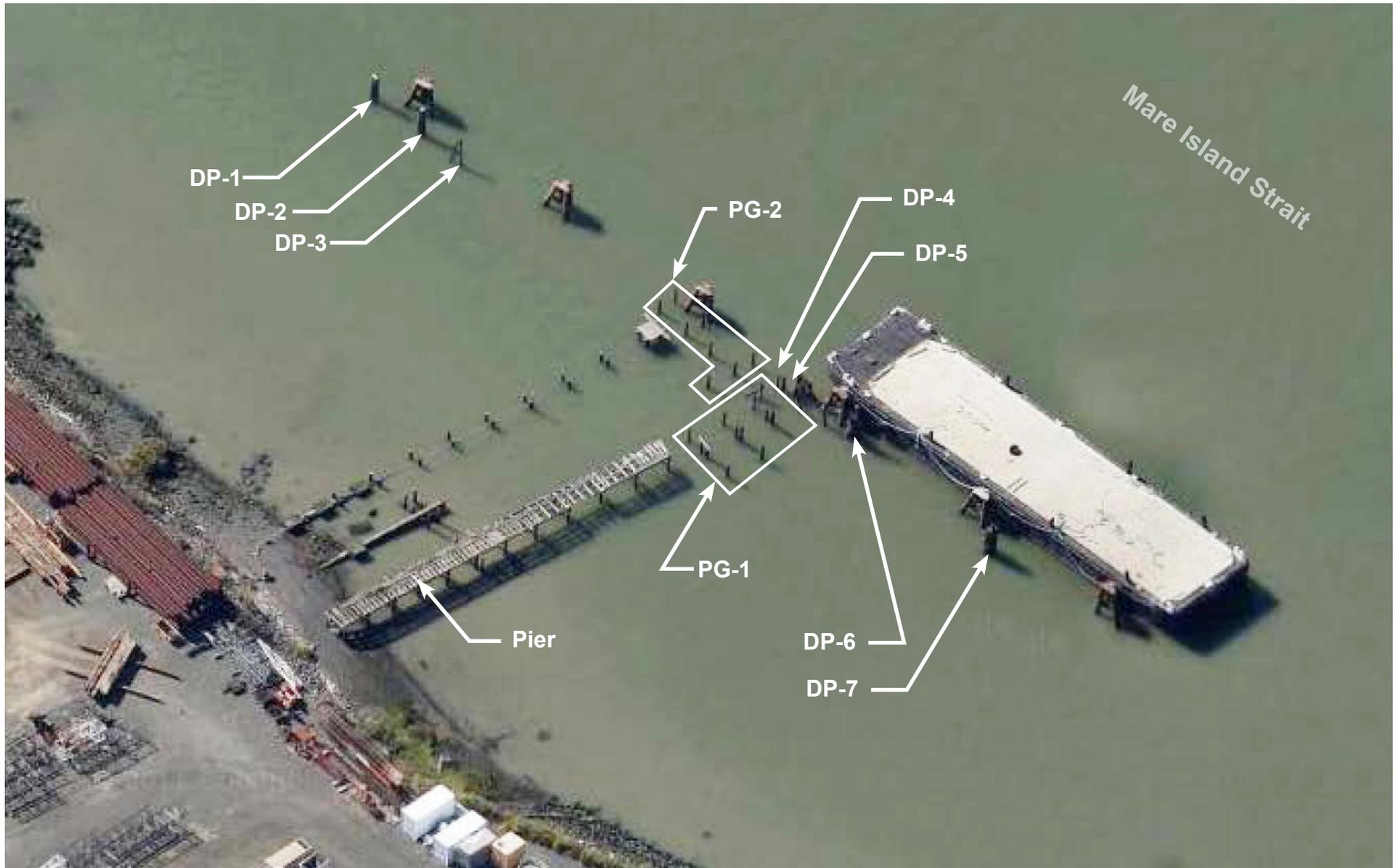


Water Emergency Transportation Authority
Vallejo Ferry Maintenance Facility

Job Number	8410386
Revision	1
Date	11 October 2013

North Dolphin Pile Site

Figure 3



LEGEND
 DP = Dolphin Pile
 PG = Pile Grouping



Water Emergency Transportation Authority
 Vallejo Ferry Maintenance Facility

Job Number	8410386
Revision	
Date	Dec 2013

Pier Pile Site

Figure 4

Appendix B

Photographs of Mitigation Sites



Photo 1: North Dolphin Pile Site



Photo 2: Pier Site from Shoreline



Photo 3: Pier Site Approximately 200 Feet from Shoreline



Photo 4: Project Impact Site



Photo 5: Debris along Shoreline



Photo 6: Debris along Shoreline

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October 25, 2013

Application Summary

(For Commission consideration on November 7, 2013)

Number: BCDC Permit Application No. 2011.002.00
Date Filed: September 6, 2013
90th Day: December 5, 2013
Staff Assigned: Michelle Burt Levenson (415/352-3618,
michellel@bcdc.ca.gov)

Summary

- Applicant:** Water Emergency Transportation Authority (WETA)
- Location:** Along the Mare Island Strait, on Mare Island, bayward of Waterfront Avenue (between 6th and 7th Streets) and Building 165, in the City of Vallejo, Solano County (Exhibit A).
- Project:** The proposed project involves relocation and intensification of a facility for ferry mooring, storage, maintenance and fueling for the San Francisco Bay Ferry system (previously Vallejo-Baylink Ferry). The current facility is located approximately one-half mile north of the project site, bayward of Building 477 on Mare Island. The existing facility does not meet the current and future operational needs of the San Francisco Bay Ferry system. Improvements proposed in the Bay (Mare Island Strait) include installing five new floats and relocating two existing floats from Building 477 to the project site. Landside improvements include constructing a utility shed and pump facility, and installing utilities within a wharf. A portion of the landside improvements (e.g., construction of a utility shed, relocation of utilities, etc.), as well as the relocation of one of the existing floats, was previously authorized by the Commission under BCDC Permit No. M2006.002.00. Additional project-related improvements located outside of the Commission's jurisdiction include demolishing Building 855, constructing a new warehouse and rehabilitating



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Building 165 for ancillary ferry services (e.g., administration, parts and equipment storage, workshops, etc.) (Exhibits A through D). The floats would be fixed in position by approximately 40 steel and plastic piles, ranging in size from 12- to 42-inches in diameter.

The applicant proposes to mitigate for the fill impacts associated with the project by removing 114 creosote-treated piles from three locations along the Mare Island Strait, removing a 1,550-square-foot deteriorated pile-supported pier, and removing miscellaneous debris and trash from several shoreline locations near the project site. Hydro-acoustic impacts to fish as a result of construction activities would be mitigated by purchasing a 0.50-acre of mitigation credit from the Liberty Island Conservation Bank, located on the southern Yolo bypass within the Sacramento/San Joaquin Delta (Exhibit E).

Public access proposed with the project consists of extending the existing public access promenade approximately 465 feet along the wharf's edge within a 50-foot-wide corridor. Promenade improvements would include pavement resurfacing and installing lights, railings, seating and trash receptacles. A 2,000-square-foot ferry passenger waiting area and a 400-square foot public access area would also be provided (Exhibits F and G).

**Issues
Raised:**

The staff believes that the application raises four primary issues: (1) whether the project is consistent with the Commission's laws and policies on fill in the Bay; (2) whether the project is consistent with the Bay Plan policies on climate change and sea level rise; (3) whether the project is consistent with the Commission's public access policies; and (4) whether the project is consistent with the Bay Plan policies on natural resources, including fish, other aquatic organisms and wildlife, and water quality.

Background

The Vallejo ferry service is owned by the Water Emergency Transportation Authority (WETA) and operated by the Blue and Gold Fleet. The ferry service primarily uses a fleet of four vessels that serves routes between the Vallejo Ferry Terminal and the City of San Francisco's Ferry Plaza and Fisherman's Wharf. The existing ferry maintenance facility is located on the west side of Mare Island Strait at Building 477 on Mare Island and is used for crewing, repairs, fueling, maintenance, vessel moorage and storage functions related to ferry operations. (Exhibit A) Three ferry vessels, as well as a maintenance barge and loading barge, currently moor along the quay wall immediately east of Building 477.

The proposed project involves relocating the existing maintenance facility approximately one-half-mile south, bayward of Building 165. Two floats currently in place at the existing maintenance facility would be relocated to the project site and an additional five floats would be added to accommodate the new facility. The 3,600-square-foot passenger float and 4,080-square-foot service float currently in place at the existing facility have been previously authorized by the Commission under BCDC Permit Nos. 1986.002.00 and M2006.022.02, respectively. In addition to the ferry maintenance and fueling activities currently taking place at the existing facility, the applicant would provide ferry service from the site on Mare Island to the Vallejo Ferry Terminal, located across the strait, for regularly scheduled trips bound for San Francisco.

The project includes both waterside and landside improvements. The waterside improvements consist of pile installation and float placement. The waterside portion of the site is owned by the Department of the Navy (Navy). WETA is currently in the process of negotiating a lease with the Navy to construct and use this portion of the project. Landside improvements consist of constructing a fueling facility (e.g., truck pad, above ground storage tanks and pipelines) and two small utility structures, demolishing an existing building (Building 855) and replacing it with a new 4,500-square-foot warehouse, rehabilitating Building 165 and improving the existing parking lot (e.g., striping, resurfacing) to accommodate 233 parking spaces. In addition, public access improvements would be installed along the wharf and two public access areas would be provided. The majority of the landside improvements are located outside of the Commission's jurisdiction. The landside portion of the site is owned by Lennar Mare Island (LMI). WETA has entered into a lease agreement with LMI for the landside portion of the project to accommodate the maintenance facility operations. The proposed 50-foot-wide public access corridor along the wharf is controlled by LMI. The public access improvements and parking lot improvements would be authorized under a separate BCDC permit amendment as discussed in the section entitled, "A. Issues Raised, 2. Public Access", below.

Project Description

Project

Details: The applicant, the Water Emergency Transportation Authority (WETA), describes the project as follows:

1. In the Bay:

- a. Install, use, and maintain a total of up to 40 pilings that will range in diameter from 12- to 42-inches, occupying 428 cubic yards of Bay volume and covering 210 square feet of the Bay floor that would support a total of seven floats including a total of two, 1,178-square-foot finger floats totaling 2,356 square feet, one 1,056-square-foot landing float, one 1,900-square-foot maintenance float, and one, 104-square-foot working float; and
- b. Relocate (from the existing maintenance facility), use, and maintain one 4,080-square-foot service float, and one 3,600-square-foot passenger float.

2. Within the 100-foot Shoreline Band:

- a. Install, use, and maintain a 13-foot-tall, 19-foot-wide ferry portal with associated guardrails.

Bay Fill:

Work proposed in the Bay consists of installing 40 steel and plastic piles, ranging in diameter from 12- to 42-inches and occupying a total of 428 cubic yards of Bay volume and covering 210 square feet (0.048 acre) of the Bay floor. In addition a total of five new floats totaling approximately 5,416 square feet would be secured to the pilings. Two existing floats totaling 7,680 square feet would be relocated to the project site from the existing facility located at Building 477 (Exhibit B).

To mitigate for the impacts of the fill, the applicant proposes to remove a total of 114 existing, creosote treated piles at three different locations (e.g., the North Dolphin Site, the Pier Site and the project site) along the Mare Island Strait. Removal of these creosote-treated piles would have water quality benefits and would uncover 90 square feet of the Bay floor and would provide an increase of 109 cubic yards of Bay volume. In addition to pile removal, the applicant proposes to remove an existing 1,550-square-foot dilapidated pier at the Pier Site and remove miscellaneous debris and trash from several locations along the Mare Island Strait. Debris and trash removal efforts would uncover approximately 36 square feet of the Bay floor.

Table 1. Fill Areas for the Project (in square feet)

Type of Fill (sf)	Removed (sf)-Pile-supported	Removed (sf)-Solid	Floating (sf)	New (sf)-Solid	Total Net Fill (sf)
Floats			13,096		13,096
Pilings		90		210	120
Pier	1,550				(1,550)
Debris and Trash		36			(36)
Total	(1,550)	(126)	13,096	210	11,630

Public Access:

Public access proposed with the project consists of extending the existing wharf promenade (provided as a condition of approval of BCDC Permit No. 2009.003.00) by 465 feet within a 50-foot-wide corridor. Improvements would consist of applying new asphalt to the wharf surface, installing lights, trash receptacles, seating and a wharf railing consistent with the existing railing along the waterside edge. In addition, an approximately 1,961-square-foot ferry waiting area would be provided adjacent to Building 165 and the maintenance facility parking lot. This area would contain seating, bicycle racks and trash receptacles. An additional 862-square-foot public access area would also be provided at the eastern end of the site. This area may contain an artifact from the Naval shipyard as well as lights, benches and trash receptacles. In total, the project would provide 23,240 square feet of public access along the promenade and 2,823 square feet of public access within the two other public access areas.

Table 2. Public Access Areas (Approximate)

Type of Public Access	Square feet	Acres	Linear Feet
Promenade	23,240	0.53	465
Waiting Area	1,961	0.05	
Artifact Area	862	0.02	
Total	26,063	0.60	465

Schedule and Cost:

Construction of the waterside improvements is anticipated to commence by July 1, 2014, and be completed by April 30, 2015. Construction of the landside improvements is anticipated to commence by January 31, 2014, and be completed by November 30, 2014. The total project cost for the waterside improvements is estimated at \$10.1 million. The cost for the public access improvements is estimated at approximately \$258,357.

Staff Analysis

- A. **Issues Raised:** The staff believes that the application raises four primary issues: (1) whether the project is consistent with the Commission's laws and policies on fill in the Bay; (2) whether the project is consistent with the Bay Plan policies on climate change and sea level rise; (3) whether the project is consistent with the Commission's public access policies; and (4) whether the project is consistent with the Bay Plan policies on natural resources, including fish, other aquatic organisms and wildlife, and water quality.
1. **Fill.** The Commission may allow fill only when it meets the requirements identified in Section 66605 of the McAteer-Petris Act, which states, in part, that: (a) fill "should be limited to water-oriented uses" or "minor fill for improving shoreline appearance and public access"; (b) fill in the Bay should be approved only when "no alternative upland location" is available; (c) fill should be "the minimum amount necessary to achieve the purpose of the fill"; (d) "the nature, location, and extent of any fill should be such that it will minimize harmful effects to the Bay area, such as the reduction or impairment of the volume, surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment..."; and (e) "fill should be authorized when the applicant has such valid title to the properties in question that he or she may fill them in the manner and for the uses to be approved."
 - a. **Fill for a Water-Oriented Use.** The project proposal includes installing pilings and floats associated with a ferry maintenance facility. Ferry facilities are considered water oriented uses. In addition, the Bay Plan contains findings promulgating ferry use around the Bay. The Bay Plan findings on Transportation state, "[t]he Bay represents an important resource for ferry transportation..." The applicant states that ferry service contributes beneficially to the public welfare of the Bay Area by reducing the environmental impacts associated with single-occupant vehicle use. The Vallejo Ferry system carries up to 600 passengers each round-trip, and provides approximately 15 round trips per day. The applicant contends that a new maintenance facility is necessary to increase efficiency and accommodate future demand for ferry service at the Vallejo Ferry Terminal.
 - b. **Alternative Upland Location.** The applicant states that an alternative upland location for the maintenance facility is not feasible because the floats would be essential to fueling and maintaining the ferry vessels that are in the water. The applicant states that removing the vessels from the water for routine maintenance activities would be extremely costly and inefficient.
 - c. **Minimum Amount Necessary.** The project would result in the placement of 13,096 square feet of floating fill and 210 square feet of solid fill. The fill footprint for the project has been reduced since the applicant's original proposal. When the original application was submitted, a larger, 12-berth facility was envisioned, resulting in approximately 34,000 square feet of fill. Since the original submittal, the applicant has further evaluated the needs of the project. Refinement of the project has reduced the amount of floating fill by 20,904 square feet and the number of pilings from 54 to 40. The applicant states that the fill proposed with the project is the minimum necessary to service the current Vallejo fleet safely and efficiently.

- d. **Effects on Bay Resources** As discussed more fully in the “**Natural Resources Policies**” section below, best management practices have been incorporated into the project to minimize the impacts of the proposed new fill in the Bay. On April 10, 2012, the NOAA’s National Marine Fisheries Service (NMFS) determined that, with mitigation measures incorporated into the project, the project was “not likely to jeopardize the continued existence” of the threatened Central Coast steelhead, the threatened Central Valley steelhead, the threatened Central Valley spring-run Chinook salmon, the endangered Sacramento River winter-run Chinook salmon, the threatened southern distinct population segment of North American green sturgeon, and would not adversely modify the designated critical habitat for green sturgeon, Central Coast steelhead and winter-run Chinook Salmon. However, NMFS stated that take of the green sturgeon was anticipated with the pile-driving activities associated with the project. Specific measures to reduce impacts to the green sturgeon and other special-status aquatic species are described in more detail below.

On August 20, 2013, the Regional Water Quality Control Board (RWQCB) issued a water quality certification for the project.

- e. **Valid Title.** As described above, the water area associated with the project site is currently owned by the Department of the Navy. The Navy has stated that they will issue a lease to the applicant once BCDC has granted approval of the project (Exhibit H).
2. **Safety of Fills / Climate Change / Sea Level Rise.** Policy 4 of the Bay Plan policies on Safety of Fills states, in part, that “adequate measures should be provided to prevent damage from sea level rise and storm activity that may occur on fill or near the shoreline over the expected life of a project,” that “new projects on fill or near the shoreline should either be set back from the edge of the shore so that the project will not be subject to dynamic wave energy, be built so the bottom floor level of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of addressing the impacts of future sea level rise and storm activity.”

Policy 3 requires all projects, “other than repairs of existing facilities, small projects that do not increase risks to public safety, interim projects and infill projects within existing urbanized areas,” to be “designed to be resilient to a mid-century sea level rise projection”.

The applicant’s consultant provided a letter, dated September 5, 2013, prepared by Coast and Harbor Engineering, that analyzed design water levels and projected sea level rise and its impacts on the proposed floats and public access.

According to the applicant, the project structure has a design life of approximately 50 years or until 2064.

The following table includes the tidal elevations provided by the applicant for the site based on the U.S. Army Corps of Engineers (Corps) 1984 study that accounted for the contributions of astronomical tides and meteorological effects on measured water levels at the Presidio of San Francisco tidal station. Based on an extreme event analysis and allowing for appropriate tidal elevation differences from the Golden Gate to the project site, the Corps’ report estimated the 100-year flood elevation at the site to be 9.0 feet MLLW.

Table 3. Tidal Elevations (feet)

Tidal Height	Elevation Based on MLLW datum (feet)
Mean High Water (MHW)	5.30
Mean Higher High Water (MHHW)	5.86
100-Year Flood Elevation	9.0

In addition to the 100-year flood elevation, the applicant analyzed the contribution of Napa River flows to the projected water levels at the site. Based on a literature review, (Neary, et. al. 2001), Napa River discharge was estimated at 29,325 cubic feet per second (cfs) for a 55-year event. The contribution of river flows at the project site was determined using numerical modeling over a two-week period that included the highest tides during the present tidal epoch, both with and without the 55-year Napa River flows. The maximum contribution of river flow at the site was calculated to be 0.37 feet.

Current estimates of the future sea level rise vary widely, from the historic measured trend over the last century of about 8 inches per century, to as much as 55 inches per century. According to the October 2010 "State of California Sea Level Rise Interim Guidance Document" sea level rise is expected to rise at a high estimate of 1.4 feet (16 inches) by 2050.

Table 4. Contributions to Tidal Elevations (feet)

Contributing Factors to Projected Tidal Elevations	Elevation (feet)
100-year Flood (MLLW)	9.0
Napa River Discharge	0.37
CA Interim SLR Guidance	1.4
TOTAL	10.77

The quay wall elevation at the site is +12.0 feet (MLLW) (Exhibit I). The recommended extreme water level design criterion for the project site is estimated at approximately 10.77 feet (MLLW) given the factors discussed above, which is more than one foot below the top of the quay wall elevation.

The berths are floating and would therefore rise and fall with the tide. The pilings placed with the project would be cut at an elevation based on the above sea level rise projections. All pilings would have cut off elevations that are 6 to 9 feet higher than the quay wall. Thus, due to the sea level rise projections and other contributing factors for future tidal elevations at the site, and the elevation of the existing wharf and the cut-off elevations of the existing and proposed pilings, the applicant states that the project would not be impacted by sea level rise.

The Commission should determine whether the project is consistent with its law and policies regarding Bay fill, safety of fills, climate change and sea level rise.

3. **Public Access.** Section 66602 of the McAteer-Petris Act states, "...maximum feasible public access, consistent with a proposed project, should be provided." Policy 1 and Policy 6 of the Bay Plan policies on Public Access state, "a proposed fill project should increase public access to the Bay to the maximum extent feasible" and that the public

access improvements “should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for the physically handicapped to the maximum extent feasible, should include an ongoing maintenance program, and should be identified with appropriate signs.” Policy 8 states, “access to and along the waterfront should be provided by walkways, trails, or other appropriate means to connect the nearest public thoroughfare where convenient parking or public transportation may be available.” In addition, Policy 5 states, “public access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and flooding....”

The public access proposed with the project consists of extending public access improvements along the existing wharf for approximately 465 feet. This extension would connect existing access required under BCDC Permit No. 2009.003.00 and would provide a connection to future development along Mare Island. The Mare Island Reuse Plan, approved in 1996, envisions the construction of a public promenade extending from the Vallejo causeway south to the Mare Island’s Historic Core Plaza. Construction of the proposed public access would complete an important segment of this promenade. Promenade improvements would consist of applying new asphalt to the wharf surface, installing a wharf railing consistent with the existing railing along the waterside edge, lights, trash receptacles and seating. In addition, an approximately 1,961-square-foot ferry waiting area would be provided adjacent to Building 165 and the maintenance facility parking lot. This area would contain seating, two bicycle racks and trash receptacles. An additional 862-square-foot public access area would also be provided at the eastern end of the site. This area may contain an artifact from the Naval shipyard as well as lights, benches and trash receptacles. In total, the project would provide 23,240 square feet of public access promenade improvements and 2,823 square feet of public access within the two other public access areas (Exhibits F and G).

As discussed above, the applicant does not possess property rights to the area on which the public access improvements would be constructed. In order to provide the public access improvements proposed with the project, WETA has entered into an agreement with Lennar Mare Island (LMI) such that LMI would request and receive Commission approval for construction of the improvements under BCDC Permit No. M2006.022.02, and construct and maintain the improvements. If, within 6 months of completion of all wharf-related project improvements (e.g., utilities, etc.), LMI has not commenced construction of the public access improvements, WETA would either obtain the necessary approvals and construct the wharf improvements or receive Commission approval for alternate improvements, with similar value to the improvements proposed.

In determining whether a project provides maximum feasible public access, consistent with the project, the Commission and its staff use several variables in evaluating the adequacy of the public access. These variables include site constraints and opportunities, the expected level of use of the public access areas, existing access in the area, past experience with public access provided by other similar projects, project cost, and possible impacts to adjoining wildlife and habitat. The Commission has approved several similar facilities over the years, including the following:

- (1) **BCDC Permit No. 1986.020.00, City of Vallejo Redevelopment Agency, Ferry Terminal.** The Vallejo Ferry Terminal project resulted in the placement of a 4,670-square-foot dock and gangway connecting the dock to the shore, and dredging to provide the necessary depth for ferry vessels, at the City of Vallejo’s Ferry Terminal Site, Solano County. The project cost was estimated at \$1.5 million. Public access provided with the Vallejo Ferry Terminal consisted of enhancement of an existing 15,500-square-foot shoreline promenade (e.g., benches, lights, and landscaping) and 10,856 square feet of new public access consisting of a new walkway and landscaped area.

- (2) **BCDC Permit No. 2008.001.00, San Francisco Bay Area Water Transportation Authority (WETA) and San Mateo County Harbor District.** The South San Francisco Ferry Terminal project resulted in the installation of 13,980 square feet of a mixture of solid, floating and pile-supported fill, dredging to provide the necessary depth for ferry vessels and parking lot improvements all associated with the construction of a new ferry terminal, in the City of South San Francisco, San Mateo County. The cost for this project was estimated at \$30 million. Public access provided with this project included a 3,000-square-foot public access terrace, a 2,300-square-foot section of an existing pier that would be available from 6 a.m. to 8 p.m., repaving and widening of an existing pathway and public access amenities (e.g., bicycle lockers, landscaping, etc.)

Both of the projects discussed above resulted in the construction of designated passenger ferry facilities that attract hundreds of individuals daily, thus creating a greater demand on present and future public access at the site and in the vicinity. Designated ferry trips from Mare Island to San Francisco are not anticipated at this facility. The proposed project would provide ferry service to the Vallejo Ferry Terminal that would coincide with scheduled trips to San Francisco. The applicant believes that 30 individuals daily would use the ferry service between Mare Island and Vallejo upon project completion. The applicant projects that 87 individuals would use the Mare Island ferry service daily at 50 percent build-out of the Mare Island Specific Plan, and that 174 individuals would use the Mare Island ferry service daily at 100 percent build-out. In addition, the applicant states that approximately 9 to 10 maintenance and administration staff would be employed at the relocated facility. In addition, 8 to 12 captains and 24 full time deckhands would be based out of the facility. An increase in employment needs over that which are currently occurring at the existing facility are not anticipated. As discussed above, the cost for the proposed project is estimated at \$10.1 million. Approximately \$250,000 would be spent on public access improvements along the wharf and adjacent to Building 165.

The Commission should determine whether the applicant's proposed public access improvements are consistent with its policies on Public Access.

4. **Natural Resources Policies.** Policy 1 of the Bay Plan policies on Water Surface Area and Volume state, in part: "the surface area of the 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." Policy 2 of the Bay Plan policies on Fish, Other Aquatic Organisms, and Wildlife states, in part: "specific habitats that are needed to conserve, increase, or prevent the extinction of any native species, species threatened or endangered...should be protected..." Policy 4 states that the Commission should "...consult with the California Department of Fish and Wildlife [CDFW] and the U.S. Fish and Wildlife Service or [NMFS] whenever a proposed project may adversely affect an endangered or threatened...species" and "...give appropriate consideration to the recommendations of the [state and federal resource agencies] in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat." Policy 1 of the Bay Plan policies on Water Quality states, "bay water pollution should be prevented to the greatest extent feasible..." and policy 2 states that, "...the policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Board, should be the basis for carrying out the Commission's water quality responsibilities." Policy 2 of the Bay Plan Policies on Tidal Marsh and Tidal Flats states, "any proposed filling...should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects..."

On April 10, 2012, the U.S. Army Corps of Engineers requested consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (as amended), and the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act for the proposed project. Special-status species potentially affected by the project consist of the threatened Central Coast (CCC) steelhead, the threatened Central Valley steelhead, the threatened Central Valley spring-run Chinook salmon, the endangered Sacramento River winter-run Chinook salmon, and the threatened southern distinct population segment (DPS) of the North American green sturgeon. In addition, the project site is designated as critical habitat for the green sturgeon, Central Coast steelhead and winter-run Chinook salmon.

The Biological Opinion (BO) issued by NMFS for the project states that the underwater noise during pile-driving activities and the degradation of water quality due to construction would temporarily affect the threatened green sturgeon. The BO further states that operation of the facility would affect listed anadromous salmonids and green sturgeon due to the noise and turbidity associated with the operation of ferry vessels. In addition, the BO states that critical habitat for CCC steelhead, Sacramento River winter-run Chinook salmon and the southern DPS of the green sturgeon would potentially be impacted due to shading from the floats and turbidity of ferry vessel activities.

The BO concludes that the impacts of shading from the floats would be insignificant because the new berths would be located 50 feet from the quay wall where depths range from -15 to -40 feet MLLW. At these depths, it is unlikely that aquatic vegetation that is particularly valuable to fish, such as eelgrass, would occur. Other species of submerged aquatic vegetation are also limited by high baseline turbidity levels and frequent boat traffic that is unrelated to ferry operations. Additionally, the BO states that the project footprint (approximately 13,000 square feet (0.30 acre)) is small in proportion to the 57,600 acres of estuarine habitat that is available in the adjacent San Pablo Bay.

The BO requires, and the applicant proposes, several measures to offset the impacts of the project on special-status species. The applicant would implement a pile-driving program that would restrict in-water pile-driving activities to July 1 through October 30. Pile installation would occur for 10 days within a three-week period within the work window. The smallest size pile hammer would be used given the size of the pile and a bubble curtain would be implemented around the pile driving area during hammering activities. A hydroacoustic monitoring program would be employed during pile driving activities and results of the monitoring would be reported.

The BO concluded that based on the best available data, the proposed project was not likely to jeopardize the continued existence of threatened CCC and CV steelhead, threatened CV spring-run Chinook salmon, endangered Sacramento River winter-run Chinook salmon and threatened southern DPS green sturgeon. The BO further concluded that the project was not likely to affect critical habitat for the CCC steelhead, Sacramento River winter-run Chinook salmon or southern DPS green sturgeon. However, the BO concluded that take of DPS green sturgeon was anticipated during construction activities.

In addition to those measures discussed above, the applicant proposes to mitigate for fill placement by removing 114 creosote-treated piles, a 1,550-square-foot pile-supported pier located within the Mare Island Strait and 36 square feet of solid fill associated with the removal of debris and trash. In assessing whether the fill mitigation proposed with the project adequately offsets the impacts of its placement, the Commission and its staff look to similar projects with comparable amounts and types of fill. Two similar projects are discussed below.

- (1) **BCDC Permit No. 1994.013.08, Bay Ship and Yacht Company and Alameda Gateway, Ltd.** The Bay Ship and Yacht project resulted in the mooring and operation of a 32,770-square-foot dry dock in the City of Alameda, Alameda County. The fill mitigation proposed with this project consisted of the contribution of \$75,000 to CalRecycle for the removal of an abandoned dock, two vessels and marine debris within the Oakland Estuary. Approximately 6,100 square feet of solid, floating and pile-supported fill was removed as a result of fill mitigation efforts proposed with the Bay Ship and Yacht project.
- (2) **BCDC Permit No. 2008.001.00, San Francisco Bay Area Water Transportation Authority (WETA) and San Mateo County Harbor District.** As discussed above, this project involved the installation of improvements associated with a ferry terminal in the City of South San Francisco, San Mateo County. The project resulted in the placement of 13,980 square feet of a combination of solid, floating, pile-supported and cantilevered fill. Fill mitigation for the project consisted of the removal of a total 18,880 square feet of fill, much of which needed to be removed to accommodate build-out of the project.

While most of the proposed project would result in the placement of floating fill, the mitigation proposal would result in the removal of solid fill (in the form of piles, trash and debris) and pile-supported fill. The pile and debris removal would provide additional Bay surface area as well as an increase in the volume of the Bay. In addition, there are water quality benefits to removing the creosote-treated pilings as creosote is known to have deleterious effects on Bay fish and wildlife. All of the fill removal activities are located in close proximity to the project site, in the Mare Island Strait.

To offset hydro-acoustic impacts to the State-threatened Delta and longfin smelt(s) during pile-driving activities, the applicant proposes to purchase 0.50-acre of mitigation credit from the Liberty Island Conservation Bank, located on the southern Yolo Bypass within the Sacramento/San Joaquin Delta.

The Commission should determine if the proposed project, as mitigated, is consistent with the Bay Plan policies regarding fish, other aquatic organisms, and wildlife, and water quality. The Commission should also determine whether the fill mitigation would adequately offset impacts to Bay resources.

- B. **Review Boards.** The project was not reviewed by the Design Review Board or the Engineering Criteria Review Board.
- C. **Environmental Review.** The City of Vallejo, the California Environmental Quality Act (CEQA) Lead Agency for the project, prepared and distributed an Initial Study/Mitigated Negative Declaration for the project. On May 24, 2011, the City of Vallejo City Council adopted the Initial Study/Mitigated Negative Declaration for the project, which determined that the project would not have a significant effect on the environment due to the project design and implementation of mitigation measures.
- D. **Relevant Portions of the McAteer-Petris Act**
 1. Section 66605
 2. Section 66602
- E. **Relevant Portions of the San Francisco Bay Plan**
 1. Bay Plan Policies on Fish, Other Aquatic Organisms, and Wildlife (page 16)
 2. Bay Plan Policies on Water Quality (page 19)
 3. Bay Plan Policies on Water Surface Area and Volume (page 20)
 4. Bay Plan Policies on Climate Change (pages 36-39)
 5. Bay Plan Policies on Public Access (pages 67-69)

Exhibits

- A. **Location**
- B. **Ferry Facility Plan**
- C. **Rendering**
- D. **Site Photos**
- E. **Location of Mitigation Sites**
- F. **Public Access Improvements-Promenade**
- G. **Public Access Improvements-Ferry Waiting and Artifact Area**
- H. **Department of the Navy Correspondence**
- I. **Sea Level Rise Data**
- J. **Initial Study/Mitigated Negative Declaration/Mitigation and Monitoring Program**

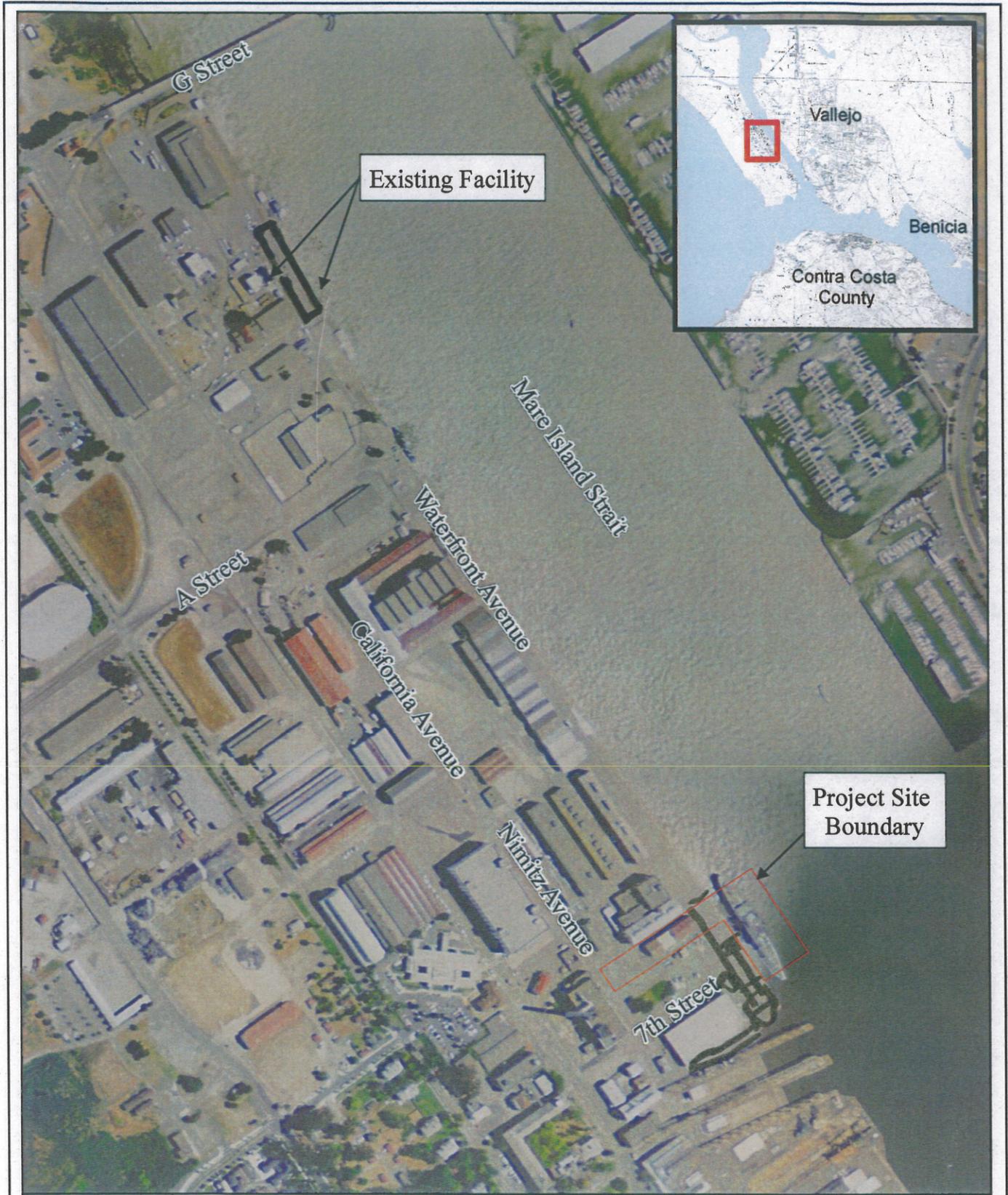


FIGURE 1
LOCATION MAP

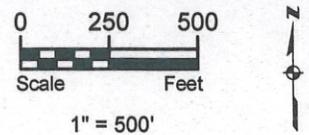




EXHIBIT C

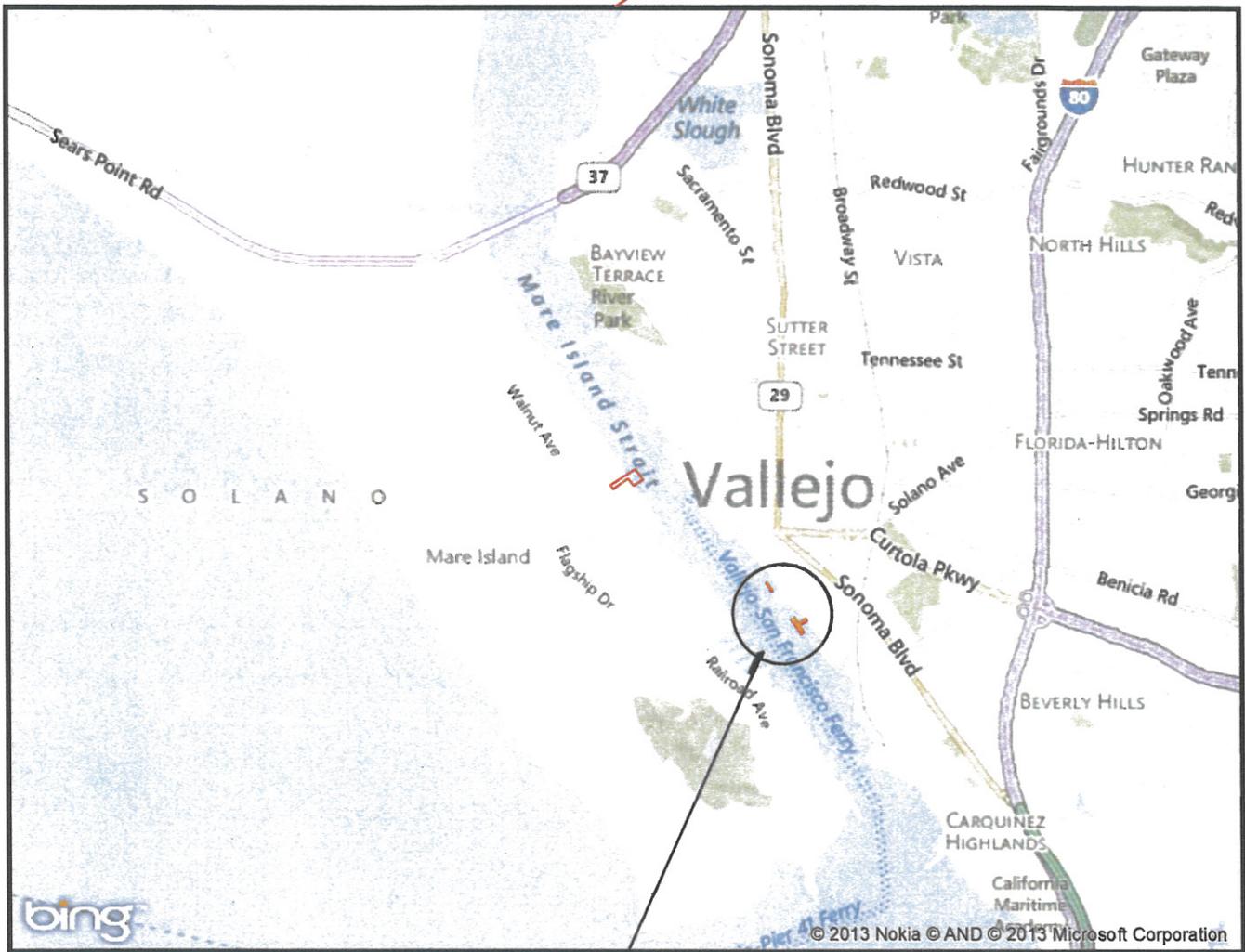
FIGURE 4 SITE PHOTOGRAPHS



View from Project Site across Mare Island Strait



Looking westerly along quay wall within project area



- LEGEND**
- Proposed Ferry Maintenance Facility Site
 - Mitigation Sites

Paper Size 8.5" x 11" (ANSI A)

0 3,000 6,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

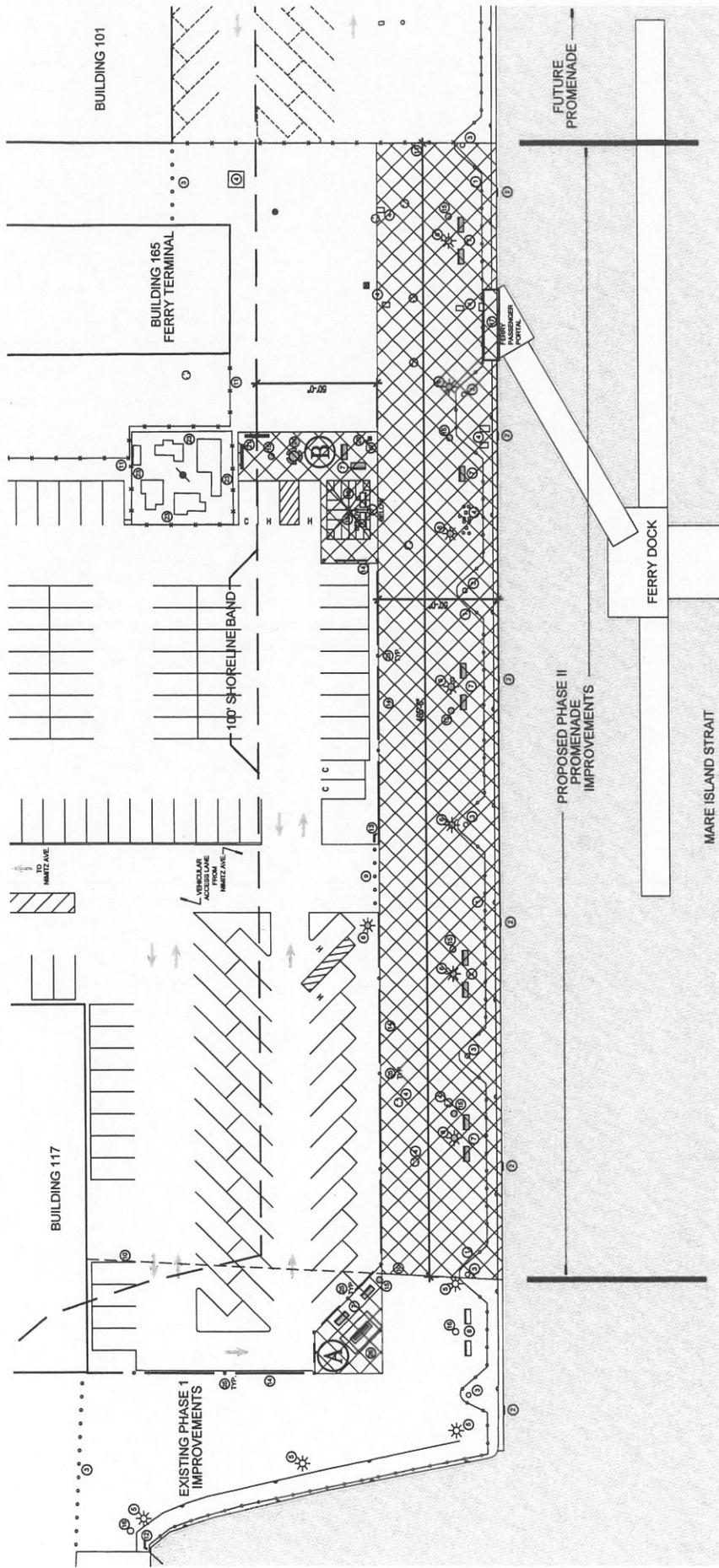


Water Emergency Transportation Authority
Vallejo Ferry Maintenance Facility

Job Number 8410386
Revision 1
Date 11 Oct 2013

Vicinity Map **Figure 1**

417 Montgomery Street Suite 700 San Francisco CA 94104 USA T 415 283 4970 F 415 283 4980 E sanfrancisco@ghd.com W www.ghd.com
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 Data source: Data Custodian, Data Set Name/Title, Version/Date. Created by:kross



PROPOSED PUBLIC ACCESS
TO BE RECORDED 26,063 SQUARE FEET



KEYNOTES

- (A) AFFRUIT LOCATION
- (B) PUBLIC SPACE - FERRY WAITING AREA
- (C) PROPOSED STAMPED AND STAINED ASPHALT
- (D) PROPOSED PIPE RAIL FENCE SET BACK 4' FROM WATER'S EDGE
- (E) EMERGENCY ESCAPE LADDERS @ 10' INTERVALS
- (F) EXISTING BOLLARD
- (G) EXISTING WORKING WATERFRONT EQUIPMENT
- (H) EXISTING LAMP POST
- (I) PROPOSED LAMP POST @ APPROX. 6' INTERVALS
- (J) PROPOSED WROUGHT IRON BENCH GROUPING
- (K) EXISTING W/ BENCH & TRASH BIN GROUPING
- (L) EXISTING W/ BENCH & TRASH BIN GROUPING
- (M) EXISTING W/ BENCH & TRASH BIN GROUPING
- (N) EXISTING CHAIN LINK FENCE TO BE REMOVED
- (O) CHAIN LINK FENCE
- (P) WATERFRONT ACCESS SIGNAGE
- (Q) PROPOSED WATERFRONT ACCESS SIGNAGE
- (R) PROPOSED SIGNAGE TO IDENTIFY PUBLIC SPACE
- (S) PROPOSED WROUGHT IRON TRASH BIN
- (T) EXISTING WROUGHT IRON TRASH BIN
- (U) FERRY PASSENGER PORTAL
- (V) PROPOSED RANGE STRUCTURE WITH BENCHES AND TRASH CAN UNDER
- (W) PROPOSED FLAG POLE
- (X) PROPOSED MONUMENT SIGN
- (Y) PROPOSED BIKE RACK
- (Z) PROPOSED STAMPED AND STAINED ASPHALT
- (AA) PROPOSED SCREEN FENCE
- (AB) PROPOSED TABLE W/ INTERNAL SEATING
- (AC) PROVIDE 4' CLEARANCE
- (AD) EXISTING BOLLARD
- (AE) TERRITURE LAYOUT

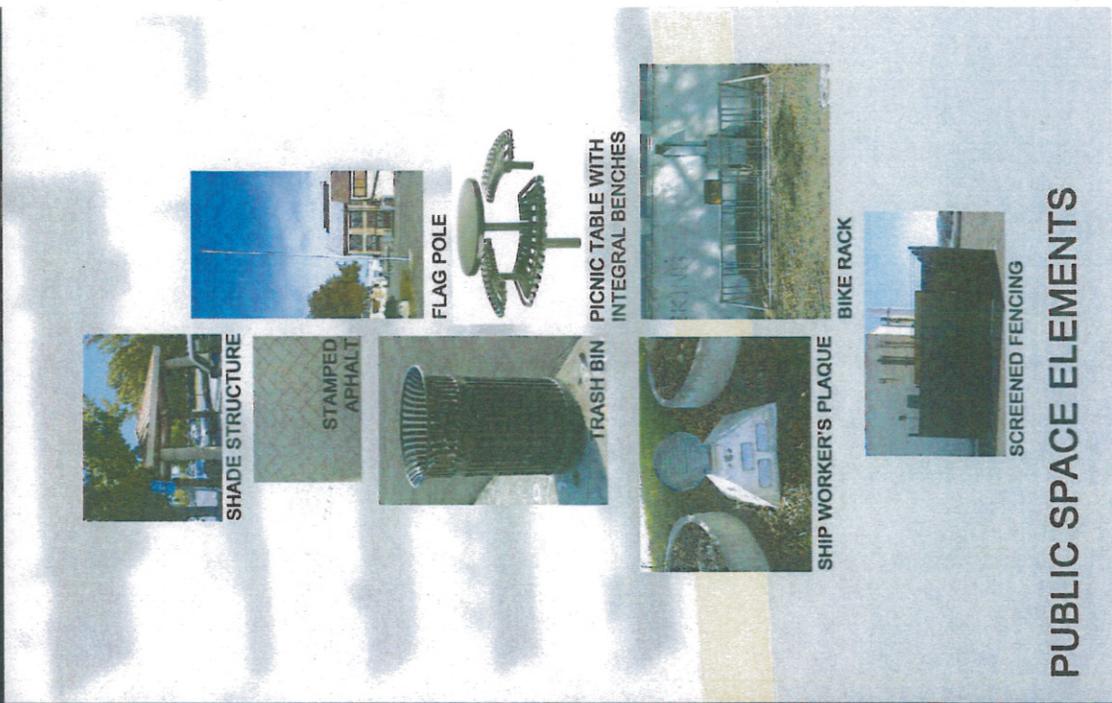
Waterfront Promenade Continuation - Phase II
Mare Island, Vallejo, CA
October 22, 2013

PROPOSED IMPROVEMENTS

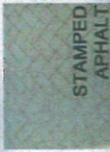
SDG Architecture + Engineering
3301 Walnut Street, Suite 100, Berkeley, CA 94710
510.864.1700
www.sdga.com

Waterfront Parking / Promenade

JUNE 28, 2013



SHADE STRUCTURE



STAMPED ASPHALT



TRASH BIN



FLAG POLE



PICNIC TABLE WITH INTEGRAL BENCHES



SHIP WORKER'S PLAQUE

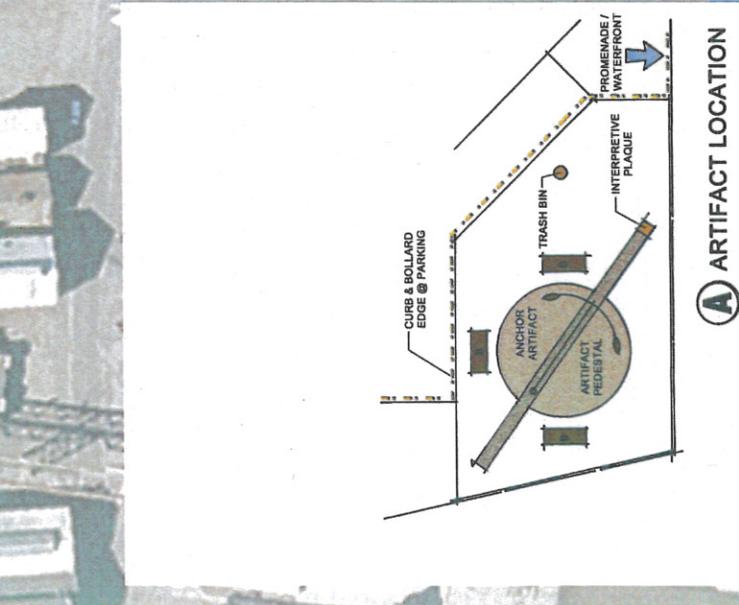
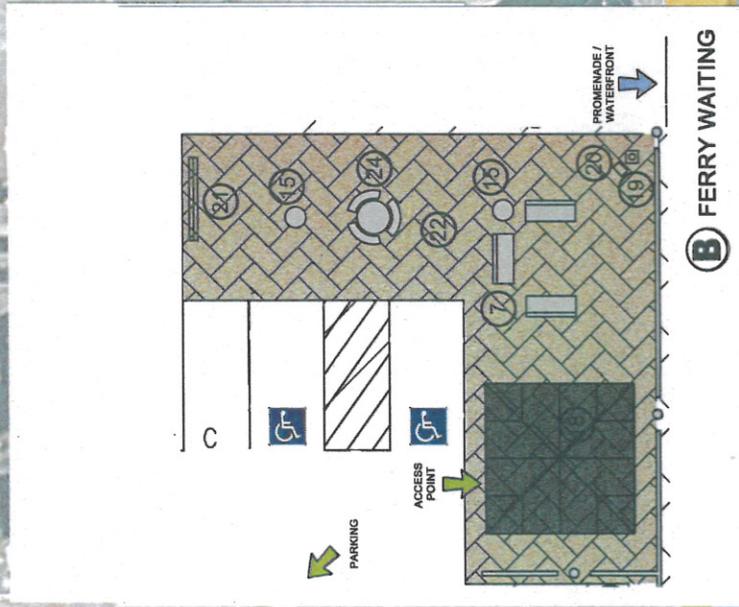


BIKE RACK



SCREENED FENCING

PUBLIC SPACE ELEMENTS



- KEYNOTES**
- (A) PUBLIC SPACE - POTENTIAL ARTIFACT LOCATION
 - (B) PUBLIC SPACE - FERRY WAITING AREA
 - (C) PUBLIC SPACE - TRAMPOLINE AREA
 - (1) PROPOSED BIKE RACK
 - (2) PROPOSED BIKE RACK
 - (3) PROPOSED BIKE RACK
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PUBLIC SPACE CONCEPTS



DEPARTMENT OF THE NAVY
BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
1455 FRAZEE RD, SUITE 900
SAN DIEGO, CA 92108-4310

5090

Ser BPMOW.ajh/0409

JUL 11 2012

Nina Rannells
Executive Director
San Francisco Bay Area Water Emergency Transportation Authority
The Embarcadero Pier 9, Suite 111
San Francisco CA 94111

Karen Weiss
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111-6080

Dear Ms. Rannells and Ms. Weiss:

SUBJECT: CONSTRUCTION OF A NEW NORTH BAY FERRY MAINTENANCE
FACILITY AT THE FORMER MARE ISLAND NAVAL SHIPYARD,
VALLEJO, CALIFORNIA

The Department of the Navy (Navy) is the owner of approximately 420 acres of submerged lands at the former Mare Island Naval Shipyard (MINS), located in Vallejo, California. A portion of the submerged lands are a designated Navy Installation Restoration (IR) Site and subject to ongoing Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) cleanup actions. Please also be advised that in accordance with the Defense Base Closure and Realignment Act of 1990, as amended, these submerged lands will revert to the State of California upon completion of the Navy's CERCLA actions and regulatory agency closure of the IR site, which is currently anticipated to occur in 2019.

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) has formally requested approval to utilize a portion of the Navy-owned submerged lands for the construction and operation of a new North Bay ferry maintenance facility for the WETA San Francisco Bay Ferry system. This letter is provided to inform you that the Navy intends to grant WETA a lease for this purpose, subsequent to the completion of an Environmental Assessment in compliance with the National Environmental Policy Act and the Navy's completion of a Finding of Suitability to Lease document. Due to the ongoing CERCLA actions, the Navy must also obtain approval to lease the

CITY OF VALLEJO
NOTICE OF DETERMINATION

TO: Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044

FROM: City of Vallejo Planning Division
555 Santa Clara Street, 2nd Floor
Vallejo, CA 94590

FILED

MAY 27 2011

Clerk to the Board of Supervisors
675 Texas Street, 6th Floor
Fairfield, CA 94533

Birgitta E. Corsello, Clerk of
the Board of Supervisors of
the County of Solano, State
of California

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 of 21102 of the Public Resources Code

Project Title: Vallejo-Baylink Ferry Maintenance Facility
State Clearinghouse #: 2011022039
Contact Person: David Kleinschmidt **Phone Number:** (707) 648-4301
Project Location: Building 165, Waterfront Avenue, Mare Island, Vallejo, CA 94592, Solano County.

Project Description:

The Vallejo-Baylink Ferry Maintenance Facility Project (Project) would replace the existing maintenance facility at a location approximately half a mile downstream from the existing maintenance facility. The Project includes landside improvements as well as waterside improvements. Phase 1 of the landside improvements include relocation of the temporary administration offices at Building 477 to the Project site, installation of fencing and security system, utility improvements, and installation of a fueling facility. The waterside improvements would cover approximately 16,000 square feet of water surface, of which approximately 11,000 square feet would be new facilities. The improvements include four new full-service berths and two mooring-only berths for the ferry vessels.

Phase 1 and 2 will start construction in June 2011 and end in February 2012. Although overall construction is expected to last for 20 months, the waterside improvements would only take 2 to 3 months. At this time it is not known when Phase 3 of the Project would be implemented.

This is to advise that the City Council of the City of Vallejo approved the above-described Project on May 24, 2011 and made the following determination regarding the project:

1. The project will not have a significant effect on the environment.
2. A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures were adopted for this project.
4. A mitigation reporting or monitoring plan was adopted for this project.
5. A statement of Overriding Considerations was not adopted for this project.
6. Findings were made pursuant to the provisions of the CEQA.

This is to certify that the Initial Study/Mitigated Negative Declaration and record of project approval is available at the Planning Division and the Office of the City Clerk, located at City Hall, 555 Santa Clara Street, Vallejo, CA 94590.

Signature _____

Michelle Hightower

Title: Acting Planning Manager
Date: May 25, 2011

This document posted from
5-27-11 to _____

Deputy Clerk of the Board

EXHIBIT J

2011022039

**Initial Study/
Subsequent Mitigated Negative Declaration**

Vallejo-Baylink Ferry Maintenance Facility
Mare Island, City of Vallejo, California

RECEIVED
FEB 11 2010

SAN FRANCISCO BAY CONSERVATION
& DEVELOPMENT COMMISSION

Prepared for:

City of Vallejo
555 Santa Clara Street
Vallejo, California 94590

February 11, 2010

Prepared by:



WINZLER & KELLY

2235 Mercury Way, Suite 150
Santa Rosa, CA 95407
707.523.1010

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
IV. BIOLOGICAL RESOURCES					
<p>Mitigation Measure BIO-1. Protection of Pallid Bat</p> <p>Two weeks prior to demolition of Building 855, or rehabilitation of Building 165, the City shall have a qualified biologist survey the building to determine whether or not it is occupied by roosting bats or native birds (e.g., barn owl, <i>Tyto alba</i>). If roosting bats or native nesting birds are found Fish & Game shall be contacted to determine the next action. The City may also opt to survey the building during the winter, verify the building is unoccupied, remove any bats or birds if the building is occupied and then board the windows and other openings to prevent bats and birds from entering and nesting between February and August.</p>	<p>Conduct surveys.</p>	<p>City of Vallejo</p>	<p>Report of findings submitted to City.</p>	<p>Construction cannot begin.</p>	
<p>Mitigation Measure BIO-2. Minimize Impacts to Salmonids and Sensitive Aquatic Species during Construction</p> <p>The City shall incorporate the following into the construction documents: Identify the minimum amount of piles that would require an impact hammer based on the results of the Geotechnical Investigation. The smallest size hammer, and the fewest strikes necessary, shall be used for installation (it could be that piles are initially driven with a vibratory hammer and then the final strikes are completed with an impact hammer during the final seating of the pile). A weighted block net shall be used to exclude most fish from the immediate work area. The block net shall be</p>	<p>Incorporate into Construction Documents. Ongoing During Construction</p>	<p>City of Vallejo Construction Manager</p>	<p>Verify included in Construction Documents. Monitoring during construction.</p>	<p>Do not bid. Stop work until compliance.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>shifted as the work area shifts. Alternatively, a bubble curtain may be used if water depth or currents make a block not infeasible. Construction within Mare Island Strait shall be limited to the period from July 15 to November 30.</p>					
<p>V. CULTURAL RESOURCES</p>					
<p>Mitigation Measure CR-1. Preserve all Distinctive Historic Materials, Features, Finishes and Examples of Craftsmanship</p> <p>Deteriorated historic features must be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature must match the old in design, color, texture, and where possible materials. Specifically:</p> <ol style="list-style-type: none"> 1) Color samples of Baylink Blue and Baylink Green shall be submitted to the Secretary of the AHCL for review and approval. 2) All original windows removed for this project shall be stockpiled within the historic building for possible future use. 3) The Secretary of the AHCL shall approve the detailed landscaped plans and light fixtures for the future parking lot. 4) Light fixtures on the front of the building shall be restored. If restoration is unachievable, replacement lights shall be approved by the Secretary of the AHCL. 	<p>Review and approval of submittals/plans.</p>	<p>Planning Department</p>	<p>Prior to issuance of building permit.</p>	<p>Deny issuance of building permit.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>Mitigation Measure CR-2. Ensure that any Project Changes are in Compliance with Secretary of the Interior's Standards for the Mare Island Historic District Design Guidelines.</p> <p>To ensure that the final project design is in accordance with the <i>Project Guidelines</i>, any changes to the design of the project made subsequent to the November 18, 2010 review and decision by the AHCL shall be reviewed by City Staff for consistency with <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i> and the <i>Mare Island Historic District Design Guidelines</i>. If determined by staff to be necessary, the changes shall be approved by the AHCL under the Certificate of Appropriateness process.</p>	<p>Review and approval of submittals/plans.</p>	<p>Planning Department</p>	<p>Prior to issuance of building permit.</p>	<p>Deny issuance of building permit.</p>	
<p>Mitigation Measure CR-3. Treatment of Archaeological Resources Discovered during Construction</p> <p>If historic features or prehistoric archaeological materials are encountered during project construction, the procedures outlined in the <i>Archaeological Treatment Plan for Mare Island</i> (PAR Environmental Services 2000b) shall be followed: specifically the steps outlined in the following treatment measure TM-9 New Discovery.</p> <p>Prior to construction an archaeologist should attend a tailgate meeting with the construction foreman and crew to discuss characteristics of potentially significant deposits. If archaeological</p>	<p>On-site observation.</p>	<p>City of Vallejo</p>	<p>During construction.</p>	<p>Stop work.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>properties (e.g., trash pits, brick foundations, dark soil containing shell, bone and stone) are encountered during construction, then ground disturbing activities in the immediate vicinity of the find shall be halted until the discovery has been examined by a qualified archaeologist. If the deposit or features appear to meet CEQA or National Register of Historic Places criteria as a legally significant deposit, then archaeological date recovery (TM-4 and TM-5) shall be implemented expeditiously so that construction work can continue with minimal delay.</p>					
<p>Mitigation Measure CR-4. Protection and Preservation of Significant Paleontological Resources</p> <p>If concentrations of paleontological resources (e.g. plant and animal fossil specimens and fossil-bearing rock units) are encountered during construction, the City shall halt ground-disturbing work in the vicinity of the find. Work near such finds shall not be resumed until a qualified paleontologist has evaluated the materials and offered recommendations for further action.</p>	<p>On-site observation.</p>	<p>City of Vallejo</p>	<p>During construction.</p>	<p>Stop work.</p>	
<p>Mitigation CR-5. Treatment of Human Remains, Associated Grave Goods, or Items of Cultural Patrimony</p> <p>If human remains are encountered during construction activities, there shall be no further excavation or disturbance of the remains, or nearby area until the Solano County Coroner has made the necessary findings as to origin, in accordance with</p>	<p>On-site observation.</p>	<p>City of Vallejo</p>	<p>During construction.</p>	<p>Stop work.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>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 shall contact, by telephone within 24 hours the Native American Heritage Commission. The Native American Heritage Commission shall immediately notify the most likely descendent (MLD). The descendent shall 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 descendants shall complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The remains shall not be damaged or disturbed by further development until the County has discussed and conferred with the MLD regarding their recommendations.</p>					

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>VI. GEOLOGY & SOILS</p> <p>Mitigation Measure GEO-1. Design Level Geotechnical Investigation</p> <p>Design and construction shall address the recommendations made in site specific design-level geotechnical reports prepared for the Project. The geotechnical recommendations shall be incorporated into the final plans and specifications for the project and implemented during construction. Recommendations from the Draft 2011 Geotechnical Report for the project include, but are not limited to, the following:</p> <p><i>Seismic Design.</i> In accordance with the 2010 California Building Code, the seismic site classification shall be based on average soil properties in the upper 100 feet. For analyses in accordance with the 2010 CBC, the site shall be classified as Site Class C. Recommended ground motion parameters for the site are provided in the Draft 2011 Geotechnical Report.</p> <p><i>Expansive Soils.</i> Risks associated with expansive soils shall be addressed by modifying or improving the subgrade soils and deepening foundations. Typical alternatives may include removing the upper 12 inches of expansive soil below proposed buildings and replacing them with imported "non-expansive" fill, or overexcavating, moisture conditioning and recompacting the native soils to a depth of approximately 18 inches under strict quality control guidelines. The zone of "non-expansive" fill or moisture conditioned native soils</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>should extend at least 5 feet outside the perimeter of the proposed buildings and at least 3 feet outside the perimeter of the proposed pavement areas. Additional recommendations are provided in the Draft 2011 Geotechnical Report.</p> <p><i>Underground Vaults.</i> Vault design shall take into account buoyancy. For design purposes, a depth to groundwater of 6 feet below the existing ground elevation at the vault location shall be used, and the vault design shall consider hydrostatic pressures on the vault walls.</p> <p><i>Below Grade Structures.</i> Below-grade vaults shall be designed to resist the lateral earth pressures exerted by the retained, compacted backfill plus any additional lateral force that will be applied to the wall due to surface loads placed at or near the wall. Wall backfill should be free draining and provisions should be made to collect and dispose of excess water that may accumulate behind earth retaining structures. Additional recommendations are provided in the Draft 2011 Geotechnical Report and shall be implemented during construction.</p> <p><i>Grading.</i> After removal of existing pavements, the exposed soil beneath the proposed new pavements and structural areas shall be removed to a depth of three feet below the proposed subgrade elevation and screened to remove oversized, objectionable, or deleterious materials before it is replaced as engineered fill. Following site stripping and any required grubbing and/or overexcavation, all areas to receive engineered fill or to be used for the future support of structures or concrete slabs</p>					

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
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Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>supported-on-grade shall be scarified to a depth of 8 inches, uniformly moisture-conditioned to between 2 and 5 percent above the optimum moisture content, and compacted to between 88 and 92 percent of the maximum dry density as determined by ASTM (American Society for Testing and Materials) Test Method D 1557. The upper 12 inches of pavement subgrade should be scarified, moisture conditioned, and compacted to at least 95 percent relative compaction.</p> <p><i>Shallow Foundations.</i> Foundations for the proposed warehouse building shall be constructed of reinforced concrete, and founded on the shale and siltstone bedrock encountered in the borings. For these structures, footings should be a minimum of 18 inches wide and embedded a minimum of 36 inches below the lowest final adjacent subgrades. Additional recommendations, including allowable bearing pressures using the above minimum dimensions, are presented in the Draft 2011 Geotechnical Report and shall be implemented during construction.</p> <p><i>Dock Pile Foundations.</i> Single dock and fender piles shall require bracing to reduce deflections and the potential for unrecoverable ground deformations at the pile sockets. Dock pile foundations shall be constructed in accordance with the engineering analysis to be performed for the project.</p>					

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
VII. HAZARDS AND HAZARDOUS MATERIALS					
<p>Mitigation Measure HAZ-1. Contaminated Materials Handling and Disposal</p> <p>Planned subsurface disturbances shall follow specific procedures and protocols outlined in the SGWMP prepared for the Eastern Early Transfer Parcel of the Lennar Mare Island site (CH2MHILL 2001). 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.</p> <p>Soils shall be stockpiled and characterized to determine suitability for re-use at the site or to determine appropriate methods of disposal off-site. Groundwater shall be contained for chemical analysis, and depending on analytical results, shall 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 shall be obtained from the Vallejo Sanitation and Flood Control District, and the discharge shall be managed in accordance with permit conditions, including flow rates, discharge hours, and concentrations limits for hydrocarbons, sediment, and other potential constituents.</p> <p>The City shall require the Contractor to submit a site-specific Work Plan providing details of how</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>soil and groundwater will be managed. The Work Plan shall conform to the SGWMP for Lennar Mare Island. The Work Plan shall be submitted to the City and the Department of Toxic Substances Control for approval, prior to excavating. The Work Plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> • 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. 					

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>Mitigation Measure HAZ-2. Lead Abatement</p> <p>The abatement and clean up of lead and heavy metals includes removing loose lead paint on building structural and architectural components and finishes to remain and then stabilizing them by surface preparation, priming, and finish coat painting. As many of these are historical surfaces, this shall be accomplished in accordance to a specification prepared and/or approved by the historical architect and applied by lead qualified painters.</p> <p>Contract documents shall ensure that the renovation and demolition processes shall be conducted in a manner that creates the minimum amount of hazardous waste and leaves the site free of lead contamination exceeding regulatory levels. All construction activities impacting lead based paint and LCP must be performed in compliance with the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of lead containing/contaminated materials. The disturbance of these components during demolition and renovation activities will require use of personnel trained in lead hazards for construction and will require compliance with applicable Cal/OSHA regulation (Title 8, CCR, Section 1532.1) and Cal/EPA regulations for disposal of lead hazardous waste (22 CCR Division 4.5 Environmental Health Standards for Management of Hazardous Wastes).</p> <ul style="list-style-type: none"> All untested paints and coatings should be considered lead based paint or lead-based coatings 	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>in the absence of exhaustive sampling and laboratory analysis.</p> <ul style="list-style-type: none"> • Loose lead paint should be removed prior to general demolition of the building to minimize airborne dispersal of lead and site contamination. • Prior to any hot work (such as torch cutting) on painted metal surfaces, the paint either needs to be removed or supplied air respirators worn during welding or torch cutting operation. • All surface preparation and paint removal wastes must be considered hazardous wastes due to the likelihood of paint chip lead levels exceeding 1,000 total lead or 5 ppm soluble lead. All paint containing waste streams should be considered potentially lead hazardous pending waste testing. • Clean the exposed surfaces of all structural/non-structural building components, fixtures and equipment. • Remove and dispose of all non-permeable fixtures when cleaned as general construction debris. • Remove and dispose of all permeable fixtures and smelting equipment as Class 1 hazardous materials • Remove and dispose of all non-structural permeable building components as Class 1 or 2 hazardous materials (wood ceiling, second floor plywood flooring, non-structural walls and partitions and non-structural wood components). • Remove all utilities as general construction debris. 					

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<ul style="list-style-type: none"> Remove loose and peeling lead-based paint at building exterior. Lockdown all remaining surfaces with a coating of paint. This includes all brick walls, wood structural framing, steel framing and roofing. <p>Remove elements in the structure that are non-structural and clean the remaining structural elements to remove any lead that has seeped into the porous surfaces. This process will address the interior perimeter brick walls and the wood structural framing for the second floor.</p>					
<p>Mitigation Measure HAZ-3. Asbestos Abatement</p> <p>Prior to demolition construction activities, known or assumed ACMs that are likely to be disturbed by those activities, must be removed and disposed of in accordance all applicable regulations including the federal National Emissions Standard for Hazardous Air Pollutants (NESHAPS), the local designated enforcement authority for NESHAPS, the Bay Area Air Quality Management District (BAAQMD), and Cal/OSHA regulations. A Cal-OSHA registered and State licensed, registered asbestos contractor (abatement/demolition/roofing) is required for removal of ACM prior to general demolition and renovation.</p> <p>At minimum, the contractor's abatement sub-contractor should remove all EPA category I & II non-friable ACM in a manner that does not produce friable ACM under Cal/OSHA Class II removal requirements and dispose of removed</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>materials as non-hazardous asbestos waste at a landfill permitted for asbestos waste disposal. The following additional requirements should be adhered to for any maintenance, renovation, or demolition projects requiring asbestos disturbance and/or removal:</p> <ul style="list-style-type: none"> All asbestos-containing wastes shall be manifested as either hazardous or nonhazardous based on asbestos content, friability, and actual waste stream classification. For this project, all waste should be non-friable, non-hazardous asbestos waste if properly removed. All asbestos removal should be overseen by a qualified independent third party retained by the building owner or manager of the site to ensure proper removal, clean up, work area clearance, and review waste shipping and disposal documentation. Contractor should perform all work in compliance with contract documents and the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of asbestos. 					
<p>Mitigation Measure HAZ-4. Disposal of Universal Wastes</p> <p>All suspect and identified non-incandescent lamps, mercury lighting tubes and other universal wastes should be removed and recycled or disposed of in accordance with the guidelines established by the California Department of Toxic Substance Control Universal Waste Rule, as stated in 22 CCR Sections 66261.9 and 66273.1 thru 66273.90.</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>Suspect PCB ballasts must be inspected for labeling and properly packaged for disposal as PCB ballasts unless marked as "No PCB's" or "PCB Free." Accumulations of avian fecal wastes and other biological wastes should be sanitized prior to general building demolition.</p>					
<p>Mitigation Measure HAZ-5. Building 165 Lease Restriction Revision Form</p> <p>Prior to occupancy, the notifications and restrictions itemized in the Finding of Suitability to Lease Technical Memorandum of January 31, 2001 shall be addressed. These include:</p> <ul style="list-style-type: none"> • Lessee notification regarding pending PCB survey/sampling/remediation – building not suitable for occupancy until complete. • PCB Free-Release required; • Lessee notification regarding access to IR sites; • Significant lessee notifications and restrictions regarding access, modifications, and usage of the building – requires permission of Navy prior to any action; • Lessee notification regarding additional notifications / restrictions upon completion of the environmental surveys which may delay occupancy approval; • Lessee notification regarding corrective action to be taken as result of Backflow Protection and Cross Connection Survey – lessee to perform these actions at own expense; and 	<p>Review environmental surveys and documentation.</p>	<p>City of Vallejo</p>	<p>Prior to issuance of Certificate of Occupancy.</p>	<p>Deny Certificate of Occupancy.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<ul style="list-style-type: none"> Building Closed, parcel release required for sublease ingress / egress; <p>Once the necessary environmental surveys and outstanding issues have been completed, a Lease Restriction Revision Form shall be completed and approved by the Navy and Regulatory Agencies. The Lease Restriction Revision Form will modify the above mentioned notifications and restrictions.</p>					

VIII. HYDROLOGICAL AND WATER QUALITY

<p>Mitigation Measure IYD-1. Industrial Storm Water Pollution Prevention Plan</p> <p>The City shall obtain coverage under State Water Resources Control Board Order No. 97-03-DWQ, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities. This shall include submittal of a notice of intent to obtain permit coverage, and preparation, retention on site, and implementation of a Storm Water Pollution Prevention Plan. The Plan shall identify the sources of pollution that affect the quality of industrial storm water discharges and authorized non-storm water discharges, and describe and ensure the implementation of best management practices to reduce or prevent pollutants in industrial storm water discharges. The Plan shall also include a monitoring program and other requirements contained in Order No. 97-03. Implementation of the SWPPP shall include the necessary inspections, monitoring, and overall</p>	Prepare SWPPP.	City of Vallejo	Verify incorporation into construction documents prior to advertising the bid for construction. Submit NOI to State Water Resources Control Board 30 days prior to the start of construction.	Can not advertise for bid. Cannot start construction.	
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**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
compliance.					



Making San Francisco Bay Better

Permittee's Copy

PERMIT NO. 2011.002.00

June 12, 2014

Mr. Kevin Connolly, Manager, Planning and Development
Water Emergency Transportation Authority (WETA)
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111

Ladies and Gentlemen:

On May 1, 2014 the San Francisco Bay Conservation and Development Commission, by a vote of 16 affirmative, 0 negative, and 0 abstentions, approved the resolution pursuant to which this permit is hereby issued:

I. Authorization

A. **Authorized Project.** Subject to the conditions stated below, the permittee, the Water Emergency Transportation Authority (WETA), is granted permission to construct the Vallejo Ferry Maintenance Facility bayward of Waterfront Avenue, between 6th and 7th Street(s) and Building 165, along the Mare Island Strait, on Mare Island, in the City of Vallejo, Solano County. Authorized work includes the following:

1. In the Bay:

- a. Install, use, and maintain a total of up to 40 pilings that will range in diameter from 12 to 42 inches, occupying a maximum of 428 cubic yards of Bay volume and covering a maximum of 210 square feet of the Bay floor and supporting a total of seven floats, including two 1,178-square-foot finger floats (a total of 2,356 square feet of Bay fill), one 1,056-square-foot landing float, one 1,900-square-foot maintenance float, and one, 104-square-foot working float; and
- b. Relocate (from the existing maintenance facility located approximately ½ mile upstream of the maintenance facility authorized herein), use, and maintain one 4,080-square-foot service float, and one 3,600-square-foot passenger float.

2. Within the 100-foot Shoreline Band:

- a. Install, use, and maintain a 13-foot-tall, 19-foot-wide ferry portal with associated guardrails; and
- b. Install up to seven utility/product lines within an existing conduit duct bank located within the wharf and repair an existing sewer line all located within an approximately 10-foot-wide corridor.

B. **Application Date.** This authority is generally pursuant to and limited by the application filed on September 6, 2013, including all accompanying and subsequently submitted correspondence and exhibits, but subject to the modifications required by conditions hereto.

- C. **Permit Expiration Dates.** Work authorized herein must commence prior to April 1, 2015, or this permit will lapse and become null and void. All work must also be diligently pursued to completion and must be completed within six months of commencement or by October 1, 2015, whichever is earlier, unless an extension of time is granted by amendment of the permit.
- D. **Fill and Public Access Summary.** The project will result in the placement of a total of 13,096 square feet of floating fill and 210 square feet of solid fill in the Bay to relocate and expand a ferry maintenance facility. To mitigate for the placement of fill as a result of construction of the project, 114 creosote-treated pilings, a 1,550-square-foot pile-supported pier and 36 square feet of miscellaneous trash and debris will be removed from the Bay.

II. Special Conditions

The authorization made herein shall be subject to the following special conditions, in addition to the standard conditions in Part IV:

A. Specific Plans and Plan Review

1. **Construction.** The final plans submitted pursuant to this condition shall generally conform to the plans entitled "Figure 3—Overall Site Plan" and "A-101-Gangway and Entry Portal Plan and Elevation", prepared by GHD, Inc., and dated July 3, 2013. Final plans for the construction of the structures authorized herein shall be prepared and submitted for BCDC review as described below. No changes to the design of the project shall be made without the prior written approval of the BCDC staff.
2. **Plan Review.** Plans for the work authorized herein must be approved by or on behalf of the Commission prior to the commencement of any construction. Such plans shall include final precise site, demolition, engineering, architectural, grading, landscaping, and best management practices plans and any other relevant criteria, specifications, and plan information for the work authorized herein. The specific drawings and information required will be determined by the staff. To save time, preliminary drawings should be submitted and approved prior to final drawings.
 - a. **Site, Demolition, Grading and Public Access Plans.** Site, demolition grading, and public access plans shall include and clearly label the shoreline (Mean High Water Line), the line 100 feet inland of the line of the shoreline, property lines, the boundaries of all areas to be reserved for public access purposes, grading, details showing the location, types, dimensions, and materials to be used for all structures, irrigation, landscaping, drainage, seating, parking, signs, lighting, fences, paths, trash containers, utilities and other improvements.
 - b. **Engineering Plans.** Engineering plans shall include a complete set of contract drawings and specifications and design criteria. The design criteria shall be appropriate to the nature of the project, the use of any structures, soil and foundation conditions at the site, and potential earthquake-induced forces. Final plans shall be signed by the professionals of record and be accompanied by:
 - (1) Evidence that the design complies with all applicable codes; and
 - (2) Evidence that a thorough and independent review of the design details, calculations, and construction drawings has been made.

- c. **Preliminary and Final Plans.** Plans submitted shall be accompanied by a letter requesting plan approval, identifying the type of plans submitted, the portion of the project involved, and indicating whether the plans are final or preliminary. Approval or disapproval shall be based upon:
- (1) completeness and accuracy of the plans in showing the features required above, particularly the shoreline (Mean High Water), property lines, and the line 100-feet inland of the shoreline, and any other criteria required by this authorization;
 - (2) consistency of the plans with the terms and conditions of this authorization;
 - (3) the provision of the amount and quality of public access to and along the shoreline and in and through the project to the shoreline required by this authorization;
 - (4) consistency with legal instruments reserving public access areas;
 - (5) assuring that any fill in the Bay does not exceed this authorization and will consist of appropriate shoreline protection materials as determined by or on behalf of the Commission;
 - (6) consistency of the plans with the recommendations, if any, of the Design Review Board;
 - (7) assuring that appropriate provisions have been incorporated for safety in case of seismic event;
 - (8) assuring that the placement of fill in the Bay will avoid and minimize impacts to subtidal marsh and wetland habitat, and mitigate for any impacts that cannot be avoided or minimized; and
 - (9) assuring that appropriate elevations have been met to prevent overtopping, flooding, and 100-year storm events in all public access areas.

Plan review shall be completed by or on behalf of the Commission within 45 days after receipt of the plans to be reviewed.

3. **Conformity with Final Approved Plans.** All work, improvements, and uses shall conform to the final approved plans. Prior to any use of the facilities authorized herein, the appropriate design professional(s) of record shall certify in writing that, through personal knowledge, the work covered by the authorization has been performed in accordance with the approved design criteria and in substantial conformance with the approved plans. No noticeable changes shall be made thereafter to any final plans or authorized work without first obtaining written approval of the change(s) by or on behalf of the Commission.
4. **Discrepancies between Approved Plans and Special Conditions.** In case of any discrepancy between final approved plans and Special Conditions of this authorization or legal instruments approved pursuant to this authorization, the Special Condition or the legal instrument shall prevail. The permittee is responsible for assuring that all plans accurately and fully reflect the Special Conditions of this authorization and any legal instruments submitted pursuant to this authorization.
5. **Appeals of Plan Review Decisions.** Any plan approval, conditional plan approval or plan denial may be appealed by the permittee or any other interested party to the Design Review Board or, if necessary, subsequently to the Commission. Such appeals must be submitted to the Executive Director within 30 days of the plan review action and must

include the specific reasons for appeal. The Design Review Board shall hold a public hearing and act on the appeal within 60 days of the receipt of the appeal. If subsequently appealed to the Commission, the Commission shall hold a public hearing and act on the appeal within 90 days of the receipt of the subsequent appeal.

B. Public Access

1. **Area.** Within six months of the completion of the ferry maintenance facility authorized herein, or by October 1, 2015, whichever is earlier, the following areas, as generally shown on Exhibit A, shall be made available exclusively to the public for unrestricted public access for walking, running, bicycling, sitting, viewing, picnicking, and related purposes. These public access areas are on lands owned by the Lennar Mare Island and the City of Vallejo and have been authorized and required under BCDC Permit No. M2006.022.03:
 - a. An approximately 465-foot-long, 50-foot-wide public access promenade along the wharf;
 - b. An approximately 1,961-square-foot ferry waiting area immediately inland of the 50-foot-wide promenade; and
 - c. An approximately 862-square-foot "artifact" area at the eastern corner of the parking lot.
2. **Installation of Public Access.** The public access required herein will be installed by Lennar Mare Island, LLC. (LMI), and has been required in BCDC Permit No. M2006.022.03. If, within six months of completion of the ferry maintenance facility authorized herein or by October 1, 2015, whichever is earlier, the public access required above has not been installed by LMI, the permittee, WETA, shall either obtain the necessary property rights and install the public access improvements required above, or develop and receive Commission approval of an alternate public access proposal of equal or greater benefit and scope to the improvements authorized herein as soon as possible but no later than April 1, 2016. Any alternative public access area should open a similar length of shoreline, be located as close as possible to the ferry maintenance facility, and connect to existing public access areas.
3. **Improvements Within the Total Public Access Area.** Within six months of completion of the ferry maintenance facility authorized herein or by October 1, 2015, whichever is earlier, the following public access improvements, as generally shown on Exhibit A, shall be completed by Lennar Mare Island pursuant to BCDC Permit No. M2006.022.03:
 - a. An approximately 465-foot-long, 50-foot-wide public access promenade (a total of 23,240 square feet) along the wharf that shall contain a minimum of nine benches, five trash receptacles, lighting, new asphalt paving and railings. All site furnishings within the promenade, the ferry terminal waiting area, and the artifact area shall be of the same material and design as those furnishings used to the east of the site and shall provide a continuation of the existing wharf promenade required in BCDC Permit No. 2009.003;
 - b. An approximately 1,961-square-foot ferry waiting area that shall contain four benches, two bicycle racks, trash receptacles, a shade structure parallel to the promenade and lighting; and
 - c. An approximately 862-square-foot "artifact" area that shall contain a naval artifact, two benches oriented towards the Bay and a trash receptacle.

Such improvements shall be fully consistent with the plans approved pursuant to Special Condition II.A of this authorization and substantially conform to Exhibit A and the plans entitled "Waterfront Promenade Continuation-Phase II", prepared by SDG Architecture and Engineering, and dated October 22, 2013 and required in BCDC Permit No. M2006.022.03.

4. **Maintenance.** The areas and improvements within the 26,063-square-foot public access areas described above shall be permanently maintained by and at the expense of the Lennar Mare Island and the City of Vallejo as required in BCDC Permit No. M2006.022.03. Such maintenance shall include, but is not limited to: repairs to all path surfaces; replacement of any trees or other plant materials that die or become unkempt; repairs or replacement as needed of any public access amenities such as signs, benches, trash containers, and lights; periodic cleanup of litter and other materials deposited within the access areas; removal of any encroachments into the access areas; assurance that the public access signs remain in place and visible; and repairs to any public access areas or improvements that are damaged by future subsidence, uneven settlement, or flooding, or inundation caused by sea level rise. Such repairs include raising land elevations or redesigning public access features to protect and ensure the usability of the public access areas and improvements at all times. Within 30 days after notification by staff, the permittee shall correct any maintenance deficiency noted in a staff inspection of the site. The permittee shall obtain approval by or on behalf of the Commission of any maintenance that involves more than in-kind repair and replacement.
5. **Reasonable Rules and Restrictions.** The permittee, in coordination with Lennar Mare Island and the City of Vallejo, may impose reasonable rules and restrictions for the use of the public access areas to correct particular problems that may arise. Such limitations, rules, and restrictions shall have first been approved by or on behalf of the Commission based on evidence that a problem exists and upon a finding that the proposed rules will not significantly affect the public nature of the area, will not unduly interfere with reasonable public use of the public access areas, and will tend to correct a specific problem that the permittee has both identified and substantiated. Rules may include restricting hours of use and delineating appropriate behavior.
- C. **Valid Title of Water Area of Project Site.** The submerged lands associated with this project are owned by the United States Navy (Navy). The Navy has stated that it will issue a lease to the permittee once BCDC has granted approval of the project. A signed copy of the lease between the permittee and the Navy shall be provided to BCDC prior to the commencement of any in-Bay construction authorized herein. Until the lease is executed by the Navy and provided to the Commission staff, the authorization for the placement of fill in the Bay contained herein is null and void.
- D. **Property Right to Perform Utility Work.** Prior to the commencement of the work authorized herein, the permittee shall provide evidence from Lennar Mare Island that the installation of utilities as authorized under I-A-2-b, above, is consistent with its lease for the land-side portion of the project site.
- E. **Minimizing Impacts to Special Status Species.** In accord with the Biological Opinions and the Streambed Alteration Agreement issued for the project authorized herein, the permittee shall comply with the following measures to minimize impacts to special-status species:
 1. All in-Bay work shall occur between August 1st through October 31st of any given year to minimize disturbance to special-status species;

2. Any pile driving accomplished through the use of an impact hammer shall employ the "soft start" technique;
 3. Unconfined bubble curtains shall be used during the installation of all steel piles to reduce resultant noise levels;
 4. The permittee shall develop and receive approval from National Marine Fisheries Services (NMFS) of a hydro-acoustic monitoring plan that shall provide details on the sound attenuation system that will be used and the methods employed to monitor and verify sound levels during pile driving activities;
 5. The permittee shall manage soil and groundwater in accordance with the "Soil and Groundwater Management Plan for Mare Island", which includes preparation of a site specific work plan to be approved by the California Department of Toxic Substances Control;
 6. The permittee shall manage all project-related storm-water run-off in accord with an approved Stormwater Pollution Prevention Program; and
 7. An Industrial Stormwater Prevention Pollution Plan shall be implemented during ferry facility operation.
- F. **Fill Mitigation.** Prior to the commencement of construction of the project authorized herein, the permittee shall submit evidence that the following fill mitigation has been completed: (1) removal of 114 creosote-treated pilings from three locations along the Mare Island Strait; (2) removal of a 1,550-square-foot pile-supported pier from the Pier Site; and (3) removal of 36 square feet of miscellaneous trash and debris from various locations near the project site. The permittee shall submit a report documenting fill mitigation activities that shall contain photographs of the fill removal area prior to and following removal activities.
- G. **Water Quality Protection.** The permittee shall ensure that project construction and operations are in compliance with the RWQCB Water Quality Certification issued for the project on August 20, 2013.
1. **Waste Discharge.** There shall be no discharge of any solid or liquid wastes, including grey water, bilge water or sewage into the Bay.
 2. **Waste Facilities.** At any time during the operation of the ferry service, the Executive Director may, by or on behalf of the Commission, require the permittee to install suitable facilities for receiving and disposing of bilge water, oily waste, and sewage from the ferry boats at the ferry maintenance facility if he/she determines that the existing pumpout facilities at the site are not being used or do not have adequate capacity to serve the facility.
- H. **Creosote Treated Wood.** No pilings or other wood structures that have been pressure treated with creosote shall be used in any area that either is or will be subject to tidal action or any certain waterway, in any salt pond, or in any managed wetland within the Commission's jurisdiction as part of the project authorized herein.
- I. **Notifying NOAA to Update Nautical Charts.** Within 30 days of the completion of the project authorized by this permit, the permittee shall provide written verification to the Commission that it has submitted to the Nautical Data Branch of the National Oceanic and Atmospheric Administration (NOAA) the following: (1) (a) as-built drawings, construction drawings or other plans that correctly depict the completed development or, if the project

involves the removal of an existing development; (b) a list of the existing development(s) that have been removed and a statement from a qualified engineer or professional salvage company certifying which portions of the development have been removed; (2) the geographic coordinates of the project using a differential geographic positioning system (DGPS) unit or other comparable equipment suitable for providing location on a Nautical Chart; and (3) the permittee's name and contact information (such as a mailing address, telephone number, fax number and/or e-mail address).

- J. **Hold Harmless Agreement.** The permittee agrees to indemnify, defend, and hold harmless the Commission, its agencies, departments, officers, agents, and employees from any and all claims, demands, losses, or judgments accruing to or in favor of any person, firm, corporation, or entity who or whose property may be injured or damaged by work performed in accordance with the terms and conditions of this permit.
- K. **Certification of Contractor Review.** Prior to commencing any grading, demolition, or construction, the general contractor or contractors in charge of that portion of the work shall submit written certification that s/he has reviewed and understands the requirements of the permit and the final BCDC-approved plans, particularly as they pertain to any public access or open space required herein, or environmentally sensitive areas.

III. Findings and Declarations

This authorization is given on the basis of the Commission's findings and declarations that the work authorized herein is consistent with the McAteer-Petris Act, the *San Francisco Bay Plan*, the California Environmental Quality Act, and the Commission's amended coastal zone management program for San Francisco Bay for the following reasons:

- A. **Fill.** The Commission may allow fill only when it meets the requirements identified in Section 66605 of the McAteer-Petris Act, which states, in part, that: (1) fill "should be limited to water-oriented uses" or "minor fill for improving shoreline appearance and public access"; (2) fill in the Bay should be approved only when "no alternative upland location" is available; (3) fill should be "the minimum amount necessary to achieve the purpose of the fill"; (4) "the nature, location, and extent of any fill should be such that it will minimize harmful effects to the Bay area, such as the reduction or impairment of the volume, surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment..."; and (5) "fill should be authorized when the applicant has such valid title to the properties in question that he or she may fill them in the manner and for the uses to be approved."
 - 1. **Fill for a Water-Oriented Use.** The project will involve installing pilings and floats to build a ferry maintenance facility, the first facility of this nature to be authorized by the Commission. Ferry facilities are a water oriented use. In addition, the San Francisco Bay Plan contains findings promoting ferry use around the Bay. The Bay Plan findings on Transportation state, "[t]he Bay represents an important resource for ferry transportation...." Ferry service contributes beneficially to the public welfare of the Bay Area by reducing the environmental impacts associated with single-occupant vehicle use. A new maintenance facility is necessary to increase efficiency and accommodate future demand for ferry service at the Vallejo Ferry Terminal.
 - 2. **Alternative Upland Location.** Ongoing maintenance of ferries requires facilities in the water to berth and service the vessels. All facilities that could be located on land have been located on land, hence there is no alternative upland location for the maintenance facility.

3. **Minimum Amount Necessary.** The project will result in the placement of 13,096 square feet of floating fill and 210 square feet of solid fill. The fill footprint for the project has been reduced since the permittee's original proposal. When the original application was submitted, a larger, 12-berth facility was envisioned, resulting in approximately 34,000 square feet of fill. Since the original submittal, the permittee has further evaluated the needs of the project. Refinement of the project has reduced the amount of floating fill by 20,904 square feet and the number of pilings from 54 to 40. The fill that will be placed with the project is the minimum necessary to service the current Vallejo fleet safely and efficiently.
4. **Effects on Bay Resources** As discussed more fully in the "Natural Resources Policies" section below, best management practices will be employed during project construction to minimize the impacts of construction and the proposed new fill on Bay resources. On April 10, 2012, the NOAA's National Marine Fisheries Service (NMFS) determined that, with mitigation measures incorporated into the project, the project was "not likely to jeopardize the continued existence" of the threatened Central Coast steelhead, the threatened Central Valley steelhead, the threatened Central Valley spring-run Chinook salmon, the endangered Sacramento River winter-run Chinook salmon, the threatened southern distinct population segment of North American green sturgeon, and would not adversely modify the designated critical habitat for green sturgeon, Central Coast steelhead and winter-run Chinook Salmon. However, NMFS stated that take of the green sturgeon was anticipated with the pile-driving activities associated with the project. Specific measures to reduce impacts to the green sturgeon and other special-status aquatic species are described in more detail below.

On April 2, 2014, the USFWS issued its Biological Opinion on the potential for the project to effect the federally-threatened delta smelt. The USFWS determined that by implementing minimization measures during construction and mitigation, the level of take anticipated with the project was "not likely to result in jeopardy to the delta smelt"(see discussion below on Natural Resources).

On August 20, 2013, the Regional Water Quality Control Board (RWQCB) issued a water quality certification for the project.

5. **Valid Title.** The water area associated with the project site is currently owned by the Department of the Navy. The Navy has stated that it will issue a lease to the permittee once BCDC has granted approval of the project. Special Condition II-C has been included in this authorization to ensure that the executed Navy lease for the portion of the project site located in the Bay is submitted to the Commission prior to the commencement of construction activities.

For all these reasons, the Commission finds that the project is consistent with its law and policies regarding Bay fill.

- B. **Safety of Fills / Climate Change / Sea Level Rise.** Policy 4 of the Bay Plan policies on Safety of Fills states, in part, that "adequate measures should be provided to prevent damage from sea level rise and storm activity that may occur on fill or near the shoreline over the expected life of a project," that "new projects on fill or near the shoreline should either be set back from the edge of the shore so that the project will not be subject to dynamic wave energy, be built so the bottom floor level of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of addressing the impacts of future sea level rise and storm activity."

Policy 3 of the Bay Plan policies on Climate Change requires all projects, “other than repairs of existing facilities, small projects that do not increase risks to public safety, interim projects and infill projects within existing urbanized areas,” to be “designed to be resilient to a mid-century sea level rise projection”.

The permittee provided a letter, dated September 5, 2013, prepared by Coast and Harbor Engineering, that analyzed design water levels and projected sea level rise and its impacts on the proposed floats and public access.

The project structure has a design life of approximately 50 years or until 2064.

The following table includes the tidal elevations for the site based on the U.S. Army Corps of Engineers (Corps) 1984 study that accounted for the contributions of astronomical tides and meteorological effects on measured water levels at the Presidio of San Francisco tidal station. Based on an extreme event analysis and allowing for appropriate tidal elevation differences from the Golden Gate to the project site, the Corps’ report estimated the 100-year flood elevation at the site to be 9.0 feet MLLW.

Table 1. Tidal Elevations (feet)

Tidal Height	Elevation Based on MLLW datum (feet)
Mean High Water (MHW)	5.30
Mean Higher High Water (MHHW)	5.86
100-Year Flood Elevation	9.0

In addition to the 100-year flood elevation, the contribution of Napa River flows to the projected water levels at the site were analyzed. Based on a literature review, (Neary, et. al. 2001), Napa River discharge was estimated at 29,325 cubic feet per second (cfs) for a 55-year event. The contribution of river flows at the project site was determined using numerical modeling over a two-week period that included the highest tides during the present tidal epoch, both with and without the 55-year Napa River flows. The maximum contribution of river flow at the site was calculated to be 0.37 feet.

According to Coast and Harbor Engineering, sea level rise is expected to reach 16 inches by 2050 and 64 inches by 2100. This is consistent with the estimates contained in the 2010 “State of California Sea Level Rise Interim Guidance Document”.

Table 2. Contributions to Tidal Elevations (feet)

Contributing Factors to Projected Tidal Elevations	Elevation (feet)
100-year Flood (MLLW)	9.0
Napa River Discharge	0.37
CA Interim SLR Guidance	1.4
TOTAL	10.77

The quay wall elevation at the site is +12.0 feet (MLLW). The recommended extreme water level design criterion for the project site which includes a 100 year flood, 55 -year storm flood flows in the Napa River, and sea level rise of 16 inches is estimated at approximately 10.77 feet (MLLW). This water level is more than one foot below the top of the quay wall elevation.

The berths are floating and will therefore rise and fall with the tide. The pilings placed with the project will be cut at an elevation based on the above sea level rise projections and will have cut off elevations that are 6 to 9 feet higher than the quay wall. Thus, factoring in sea level rise projections and other contributing factors for future tidal elevations at the site, the elevation of the existing wharf and the cut-off elevations of the existing and proposed pilings, it is expected that the project will not be impacted by sea level rise for the life of the project.

The Commission finds that the project is consistent with its law and policies regarding safety of fills, climate change and sea level rise.

- C. **Public Access.** Section 66602 of the McAteer-Petris Act states, "...maximum feasible public access, consistent with a proposed project, should be provided." Policy 1 and Policy 7 of the Bay Plan policies on Public Access state, "a proposed fill project should increase public access to the Bay to the maximum extent feasible" and that the public access improvements "should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for persons with disabilities to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs." Policy 9 states, "access to and along the waterfront should be provided by walkways, trails, or other appropriate means to connect the nearest public thoroughfare where convenient parking or public transportation may be available." In addition, Policy 5 states, "[p]ublic access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding."

WETA, the permittee for this project, has leased the water area that will be occupied by the ferry floats, a building (Building 165) and an apron area located in front of the building. The area along the wharf and the parking lot adjacent to the building are owned by Lennar Mare Island and the City of Vallejo. In BCDC Permit No. M2006.022.003 Lennar Mare Island and the City of Vallejo were authorized to install underground conduits and fuel lines between the WETA building and the ferry berths. In the latest amendment to that permit, Lennar and Vallejo sought authorization to construct the planned public access improvements along the wharf and in the parking lot. This public access was proposed as part of future development along this section of the waterfront, such as the WETA project. As such, this public access was required as part of this project. The required public access along this section of the wharf consists of extending public access improvements for approximately 465 feet. This extension will connect existing access required under BCDC Permit No. 2009.003.00 and will provide a connection to future development along Mare Island. The Mare Island Reuse Plan, approved in 1996, envisions the construction of a public promenade extending from the Vallejo causeway south to the Mare Island Historic Core Plaza. Construction of the public access will complete an important segment of this promenade. Promenade improvements will consist of applying new asphalt to the wharf surface, installing a wharf railing consistent with the existing railing along the waterside edge, lights, trash receptacles and seating. In addition, an approximately 1,961-square-foot ferry waiting area will be provided adjacent to Building 165 and the maintenance facility parking lot. This area will contain seating, two bicycle racks and trash receptacles. An additional 862-square-foot public access

area will also be provided at the eastern end of the site. This area may contain an artifact from the Naval shipyard as well as lights, benches and trash receptacles. In total, the project will provide 23,240 square feet of public access promenade improvements and 2,823 square feet of public access within the two other public access areas.

As noted above, the permittee, WETA, does not possess property rights to the area on which the public access improvements will be constructed. In order to provide the public access improvements required with the project, WETA has entered into an agreement with Lennar Mare Island (LMI), the property owner. On March 5, 2014, LMI and the City of Vallejo received approval to construct the public access improvements under a non-material amendment to BCDC Permit No. M2006.022. To ensure that the project authorized under the permit provides maximum feasible public access to the Bay, Special Condition II-B-2 has been included herein. This special condition requires the permittee to either install the required public access if LMI does not complete installation of the improvements, or develop, receive Commission approval, and install and maintain comparable public access improvements as to those required under the permit.

The Commission finds that the public access improvements provided with the project, as conditioned above, are consistent with its policies on Public Access.

D. Natural Resources Policies. Policy 1 of the Bay Plan policies on Water Surface Area and Volume state, in part: "the surface area of the 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." Policy 2 of the Bay Plan policies on Fish, Other Aquatic Organisms, and Wildlife states, in part: "specific habitats that are needed to conserve, increase, or prevent the extinction of any native species, species threatened or endangered...should be protected..." Policy 4 states that the Commission should "...consult with the California Department of Fish and Wildlife [CDFW] and the U.S. Fish and Wildlife Service or [NMFS] whenever a proposed project may adversely affect an endangered or threatened...species" and "...give appropriate consideration to the recommendations of the [state and federal resource agencies] in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat." Policy 1 of the Bay Plan policies on Water Quality states, "bay water pollution should be prevented to the greatest extent feasible..." and policy 2 states that, "...the policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Board, should be the basis for carrying out the Commission's water quality responsibilities." Policy 2 of the Bay Plan Policies on Tidal Marsh and Tidal Flats states, "any proposed filling...should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects...."

On April 10, 2012, the U.S. Army Corps of Engineers requested consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (as amended), and the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act for the project. Special-status species potentially affected by the project consist of the threatened Central Coast (CCC) steelhead, the threatened Central Valley steelhead, the threatened Central Valley spring-run Chinook salmon, the endangered Sacramento River winter-run Chinook salmon, and the threatened southern distinct population segment (DPS) of the North American green sturgeon. In addition, the project site is designated as critical habitat for the green sturgeon, Central Coast steelhead and winter-run Chinook salmon.

The Biological Opinion (BO) issued by NMFS for the project states that the underwater noise during pile-driving activities and the degradation of water quality due to construction will temporarily affect the threatened green sturgeon. The BO further states that operation of the facility will affect listed anadromous salmonids and green sturgeon due to the noise and turbidity associated with the operation of ferry vessels. In addition, the BO states that critical habitat for CCC steelhead, Sacramento River winter-run Chinook salmon and the southern DPS of the green sturgeon will potentially be impacted due to shading from the floats and turbidity of ferry vessel activities.

The NMFS BO concluded that the impacts of shading from the floats will be insignificant because the new berths would be located 50 feet from the quay wall, where depths range from -15 to -40 feet MLLW. At these depths, it is unlikely that aquatic vegetation that is particularly valuable to fish, such as eelgrass, would occur. Other species of submerged aquatic vegetation are also limited by high baseline turbidity levels and frequent boat traffic that is unrelated to ferry operations. Additionally, the NMFS BO states that the project footprint (approximately 13,000 square feet (0.30 acre)) is small in proportion to the 57,600 acres of estuarine habitat that is available in the adjacent San Pablo Bay.

On November 6, 2013, the U.S. Army Corps of Engineers requested consultation with the U.S. Fish and Wildlife Service regarding potential effects on the project on federally-threatened delta smelt. On April 2, 2014, the USFWS issued its Biological Opinion which states that the project has the potential to effect the delta smelt by generating sound and turbidity during construction activities. In addition, the BO states that the project will increase shading of potential delta smelt habitat through the installation of floats and gangways. The Biological Opinion concludes that take of the delta smelt as a result of the project will be "incidental" and that direct mortality or harm to the species will be low because construction activities will be conducted within the work window for the species and mitigation measures will be implemented during construction. Thus, the BO concludes that the anticipated level of take of the delta smelt as a result of the project is "not likely to result in jeopardy to the delta smelt."

Several special conditions have been required to ensure that the potential impacts of the project on special-status species will be minimized. Special Condition II-D-1 limits in-water pile-driving activities to August 1 through October 30. Special Condition II-D-3 requires the use of a bubble curtain during pile-hammering activities and Special Condition II-D-4 requires the preparation of a hydroacoustic monitoring program in accord with the requirements of the NMFS.

As described above, the project will result in the placement of 13,096 square feet of floating fill and 210 square feet of solid fill (from piling placement). In addition to the mitigation measures discussed above, the permittee will mitigate for fill placement by removing 114 creosote-treated piles, a 1,550-square-foot pile-supported pier located within the Mare Island Strait and 36 square feet of solid fill associated with the removal of miscellaneous debris and trash found in a nearby intertidal area. Most of the fill associated with the project will consist of floating fill. However, the mitigation will result in the removal of solid fill (in the form of piles, trash and debris) and pile-supported fill. The pile and debris removal will provide additional Bay surface area as well as an increase in Bay volume. In addition, there are water quality benefits to removing the creosote-treated pilings as creosote is known to have deleterious effects on Bay fish and wildlife. All of the fill removal activities are located near the project site.

In assessing whether the fill mitigation provided with the project adequately off-sets the impacts of its placement, the Commission and its staff looks to similar projects with comparable amounts and types of fill. Two similar projects are discussed below.

1. BCDC Permit No. 1994.013.08, Bay Ship and Yacht Company and Alameda Gateway, Ltd. The Bay Ship and Yacht project resulted in the mooring and operation of a 32,770-square-foot dry dock in the City of Alameda, Alameda County. The fill mitigation proposed with this project consisted of the contribution of \$75,000 to CalRecycle for the removal of an old abandoned dock, two vessels and marine debris within the Oakland Estuary. Approximately 6,100 square feet of solid, floating and pile-supported fill was removed as a result of fill mitigation efforts proposed with the Bay Ship and Yacht project.
2. BCDC Permit No. 2008.001.00, San Francisco Bay Area Water Transportation Authority (WETA) and San Mateo County Harbor District. As discussed above, this project involved the installation of improvements associated with a ferry terminal in the City of South San Francisco, San Mateo County. The project resulted in the placement of 13,980 square feet of a combination of solid, floating, pile-supported and cantilevered fill. Fill mitigation for the project consisted of the removal of a total 18,880 square feet of fill, much of which needed to be removed to accommodate build-out of the project.

While the most of the project will result in the placement of floating fill, the mitigation proposal will result in the removal of solid fill (in the form of piles and trash and debris) and pile-supported fill. The pile and debris removal will provide additional Bay area as well as an increase in the volume of the Bay. In addition, there are water quality benefits to removing the creosote treated pilings as creosote is known to have deleterious effects on Bay fish and wildlife. All of the fill removal activities are located in close proximity to the project site, in the Mare Island Strait.

Special Condition II-E of this authorization requires the permittee to submit evidence that the fill mitigation has been completed prior to commencing any construction associated with installing the ferry berths.

The Commission finds that the project, as mitigated, is consistent with the Bay Plan policies on fish, other aquatic organisms, and wildlife, and water quality. The Commission also finds that the fill mitigation will adequately offset impacts to Bay resources.

- E. **Review Boards.** The project was not reviewed by the Design Review Board or the Engineering Criteria Review Board. However, pursuant to BCDC Permit No. M2006.022.03, the public access component of this project may, at the staff's discretion, be brought before the Design Review Board prior to implementation of the public access improvements required herein.
- F. **Environmental Review.** The City of Vallejo, the California Environmental Quality Act (CEQA) Lead Agency for the project, prepared and distributed an Initial Study/Mitigated Negative Declaration for the project. On May 24, 2011, the City of Vallejo City Council adopted the Initial Study/Mitigated Negative Declaration for the project, which determined that the project would not have a significant effect on the environment due to the project design and implementation of mitigation measures.
- G. **Coastal Zone Management Act.** The Commission further finds, declares, and certifies that the activity or activities authorized herein are consistent with the Commission's Amended Management Program for San Francisco Bay, as approved by the Department of Commerce under the Federal Coastal Zone Management Act of 1972, as amended.

- H. **Conclusion.** For all the above reasons, the Commission finds, declares, and certifies that, subject to the Special Conditions stated herein, the project authorized herein is consistent with the *San Francisco Bay Plan*, the McAteer-Petris Act, the Commission's Regulations, the California Environmental Quality Act, and the Commission's Amended Management Program for the San Francisco Bay segment of the California coastal zone.

IV. Standard Conditions

- A. **Permit Execution.** This permit shall not take effect unless the permittee executes the original of this permit and returns it to the Commission within ten days after the date of the issuance of the permit. No work shall be done until the acknowledgment is duly executed and returned to the Commission.
- B. **Notice of Completion.** The attached Notice of Completion and Declaration of Compliance form shall be returned to the Commission within 30 days following completion of the work.
- C. **Permit Assignment.** The rights, duties, and obligations contained in this permit are assignable. When the permittee transfers any interest in any property either on which the activity is authorized to occur or which is necessary to achieve full compliance of one or more conditions to this permit, the permittee/transferor and the transferee shall execute and submit to the Commission a permit assignment form acceptable to the Executive Director. An assignment shall not be effective until the assignees execute and the Executive Director receives an acknowledgment that the assignees have read and understand the permit and agree to be bound by the terms and conditions of the permit, and the assignees are accepted by the Executive Director as being reasonably capable of complying with the terms and conditions of the permit.
- D. **Permit Runs With the Land.** Unless otherwise provided in this permit, the terms and conditions of this permit shall bind all future owners and future possessors of any legal interest in the land and shall run with the land.
- E. **Other Government Approvals.** All required permissions from governmental bodies must be obtained before the commencement of work; these bodies include, but are not limited to, the U. S. Army Corps of Engineers, the State Lands Commission, the Regional Water Quality Control Board, and the city or county in which the work is to be performed, whenever any of these may be required. This permit does not relieve the permittee of any obligations imposed by State or Federal law, either statutory or otherwise.
- F. **Built Project must be Consistent with Application.** Work must be performed in the precise manner and at the precise locations indicated in your application, as such may have been modified by the terms of the permit and any plans approved in writing by or on behalf of the Commission.
- G. **Life of Authorization.** Unless otherwise provided in this permit, all the terms and conditions of this permit shall remain effective for so long as the permit remains in effect or for so long as any use or construction authorized by this permit exists, whichever is longer.
- H. **Commission Jurisdiction.** Any area subject to the jurisdiction of the San Francisco Bay Conservation and Development Commission under either the McAteer-Petris Act or the Suisun Marsh Preservation Act at the time the permit is granted or thereafter shall remain subject to that jurisdiction notwithstanding the placement of any fill or the implementation of any substantial change in use authorized by this permit. Any area not subject to the

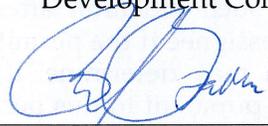
jurisdiction of the San Francisco Bay Conservation and Development Commission that becomes, as a result of any work or project authorized in this permit, subject to tidal action shall become subject to the Commission's "bay" jurisdiction.

- I. **Changes to the Commission's Jurisdiction as a Result of Natural Processes.** This permit reflects the location of the shoreline of San Francisco Bay when the permit was issued. Over time, erosion, avulsion, accretion, subsidence, relative sea level change, and other factors may change the location of the shoreline, which may, in turn, change the extent of the Commission's regulatory jurisdiction. Therefore, the issuance of this permit does not guarantee that the Commission's jurisdiction will not change in the future.
- J. **Violation of Permit May Lead to Permit Revocation.** Except as otherwise noted, violation of any of the terms of this permit shall be grounds for revocation. The Commission may revoke any permit for such violation after a public hearing held on reasonable notice to the permittee or its assignee if the permit has been effectively assigned. If the permit is revoked, the Commission may determine, if it deems appropriate, that all or part of any fill or structure placed pursuant to this permit shall be removed by the permittee or its assignee if the permit has been assigned.
- K. **Should Permit Conditions Be Found to be Illegal or Unenforceable.** Unless the Commission directs otherwise, this permit shall become null and void if any term, standard condition, or special condition of this permit shall be found illegal or unenforceable through the application of statute, administrative ruling, or court determination. If this permit becomes null and void, any fill or structures placed in reliance on this permit shall be subject to removal by the permittee or its assignee if the permit has been assigned to the extent that the Commission determines that such removal is appropriate. Any uses authorized shall be terminated to the extent that the Commission determines that such uses should be terminated.
- L. **Permission to Conduct Site Visit.** The permittee shall grant permission to any member of the Commission's staff to conduct a site visit at the subject property during and after construction to verify that the project is being and has been constructed in compliance with the authorization and conditions contained herein. Site visits may occur during business hours without prior notice and after business hours with 24-hour notice.
- M. **Abandonment.** If, at any time, the Commission determines that the improvements in the Bay authorized herein have been abandoned for a period of two years or more, or have deteriorated to the point that public health, safety or welfare is adversely affected, the Commission may require that the improvements be removed by the permittee, its assignee or successors in interest, or by the owner of the improvements, within 60 days or such other reasonable time as the Commission may direct.
- N. **Best Management Practices**
 1. **Debris Removal.** All construction debris shall be removed to an authorized location outside the jurisdiction of the Commission. In the event that any such material is placed in any area within the Commission's jurisdiction, the permittee, its assigns, or successors in interest, or the owner of the improvements, shall remove such material, at its expense, within ten days after they have been notified by the Executive Director of such placement.
 2. **Construction Operations.** All construction operations shall be performed to prevent construction materials from falling, washing or blowing into the Bay. In the event that such material escapes or is placed in an area subject to tidal action of the Bay, the permittee shall immediately retrieve and remove such material at its expense.

O. **In-Kind Repairs and Maintenance.** Any in-kind repair and maintenance work authorized herein shall not result in an enlargement of the authorized structural footprint and shall only involve construction materials approved for use in San Francisco Bay. Work shall occur during periods designated to avoid impacts to fish and wildlife. The permittee shall contact Commission staff to confirm current restricted periods for construction.

Executed at San Francisco, California, on behalf of the San Francisco Bay Conservation and Development Commission on the date first above written.

LAWRENCE J. GOLDZBAND
Executive Director
San Francisco Bay Conservation and
Development Commission

By: 
ROBERT J. BATHA
Chief of Permits

RJB/MBL/ra

cc: U. S. Army Corps of Engineers, Attn.: Regulatory Functions Branch
San Francisco Bay Regional Water Quality Control Board,
Attn.: Certification Section
Environmental Protection Agency

* * * * *

Receipt acknowledged, contents understood and agreed to:

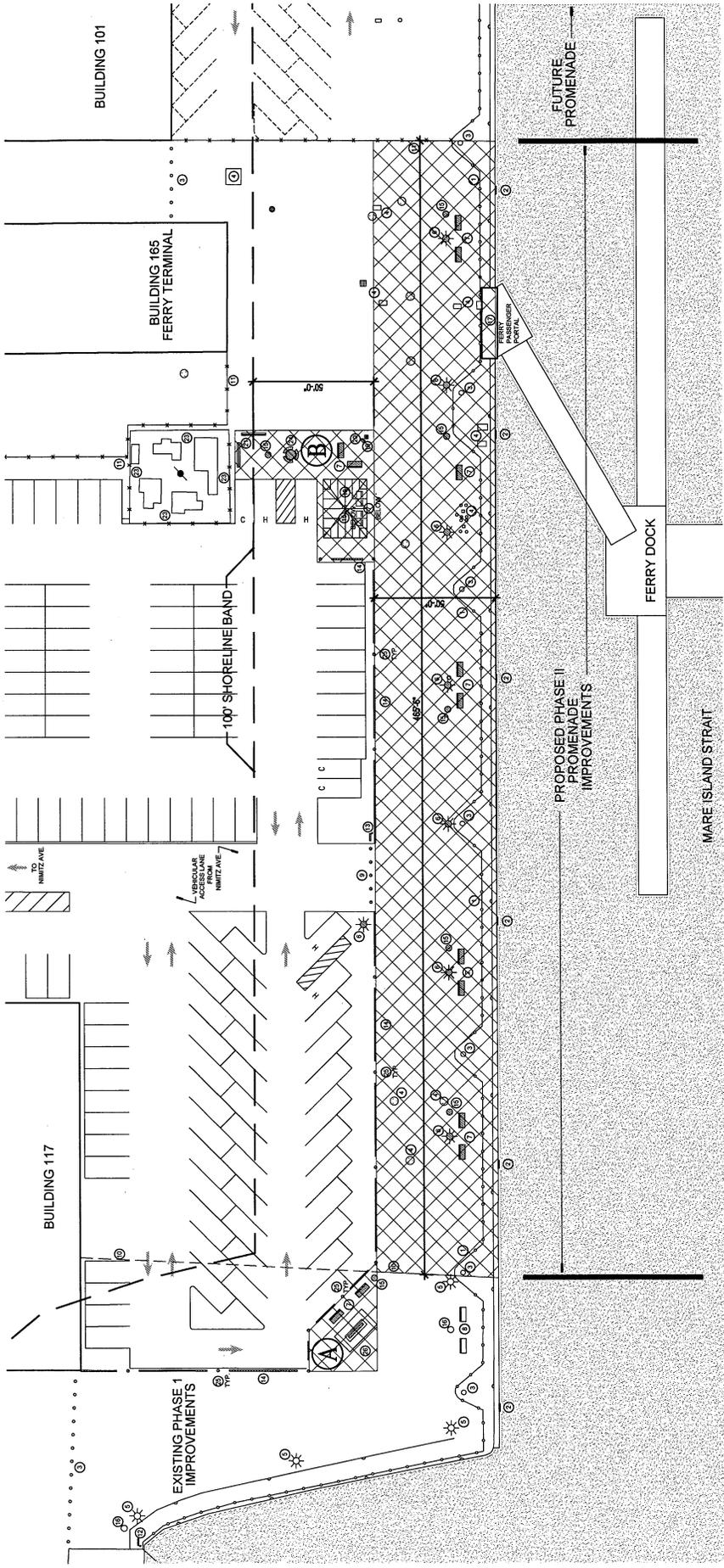
Executed at San Francisco, CA

WETA
Permittee

On 6/16/14

By: Nina Rannells

NINA RANNELLS EXECUTIVE DIRECTOR
Print Name and Title

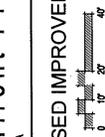


PROPOSED PUBLIC ACCESS
TO BE RECORDED 26,063 SQUARE FEET

KEYNOTES

- (A) ATTRACT LOCATION
- (B) PUBLIC SPACE - FERRY WAITING AREA
- (1) PROPOSED STAMPEDED AND STAINED ASPHALT WATERFERENCE
- (2) PROPOSED PIPE RAIL FENCE SET BACK 4' FROM WATERFERENCE
- (3) EMERGENCY ESCAPE LADDER @ 100' INTERVALS
- (4) EXISTING BOLLARD
- (5) EXISTING WORKING WATERFRONT EQUIPMENT FOR VEHICLE
- (6) EXISTING LAMP POST
- (7) PROPOSED LAMP POST @ 4' PRICE, 60' INTERVALS
- (8) PROPOSED WROUGHT IRON BENCH GROUPING
- (9) EXISTING W/ BENCH'S TRASH BIN GROUPING
- (10) PROPOSED REMOVABLE BOLLARDS TO ALLOW ACCESS TO WATERFRONT
- (11) EXISTING CHAIN LINK FENCE TO BE REMOVED
- (12) CHAIN LINK FENCE
- (13) WATERFRONT ACCESS SIGNAGE
- (14) PROPOSED WATERFRONT ACCESS SIGNAGE
- (15) PROPOSED 30' LONG ASPHALT CURB SECTIONS TO PROVIDE 4'-0" CLEARANCE ACCESS TO WATERFRONT PROMENADE
- (16) PROPOSED WROUGHT IRON TRASH BIN
- (17) EXISTING WROUGHT IRON TRASH BIN
- (18) FERRY PASSENGER PORTAL
- (19) PROPOSED SPACE FENCE WITH BRICKSEAM TRASH CAN UNDER
- (20) PROPOSED FLAG POLE
- (21) PROPOSED MONUMENT SIGN
- (22) PROPOSED BINE BACK
- (23) PROPOSED STAMPEDED AND STAINED ASPHALT
- (24) PROPOSED SCREEN FENCE
- (25) PROPOSED TABLE W/ INTEGRAL SEATING
- (26) PROVIDE 4'-0" CLEARANCE BETWEEN CURB AND BOLLARD
- (27) TENTATIVE LAYOUT

Waterfront Promenade Continuation - Phase II
October 22, 2013



PROPOSED IMPROVEMENTS



SDG Architecture + Engineering
3801 World Bank Suite 120 Berkeley, CA 94703
925.874.7000
www.sdgarchitecture.com

EXHIBIT A



California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5500
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director



June 16, 2014

Chad Mason
Senior Planner
San Francisco Bay Water Emergency Transportation Authority
Pier 9, Suite 111, Embarcadero
San Francisco, CA 94111

Subject: Amendment of Lake or Streambed Alteration Agreement
Notification No. 1600-2011-0028-R3
Mare Island Strait; Baylink – Vallejo Ferry Maintenance Facility

Dear Mr. Mason:

The Department of Fish and Wildlife (Department) has received your request to amend Lake or Streambed Alteration Agreement 1600-2011-0028-3 (Agreement) and the required fee in the amount of \$168 for a minor amendment. Your request to amend the Agreement included a minor modification to the Project Description, and a transfer of the Agreement from David Kleinschmidt, City of Vallejo and Baylink ("Transferor"), the current applicant under the Agreement, to Chad Mason, San Francisco Bay Water Emergency Transportation Authority (WETA) ("Transferee").

Project Description modification:

The waterside facility has been reduced in size from 54 piles, covering 282 square feet, to 40 piles covering 210 square feet. The surface area of the facility also has been reduced. All other components of the project remain the same as previously authorized.

The Department, Transferor, and Transferee hereby agree to the following:

1. The Agreement is hereby transferred from Transferor to Transferee, thereby making Transferee the new Applicant under the Agreement.
2. Transferee shall be solely responsible for complying with all terms and conditions in the Agreement; including, but not limited to, any terms and conditions for which Transferor was previously responsible as the former Applicant under the Agreement.
3. This Agreement shall take effect on the last date of signature.

Chad Mason
Vallejo Ferry Maintenance Facility
June 16, 2014
Page 2 of 2

Transferor:
City of Vallejo
David Kleinschmidt
555 Santa Clara Street
Vallejo, CA 94590
(707) 648-4315

Transferee:
San Francisco Bay Water Emergency Transportation Authority
Chad Mason
Pier 9, Suite 111, Embarcadero
San Francisco, CA 94111
(415) 364-1745

The Department hereby agrees to amend the agreement as requested. All conditions in the Agreement remain in effect.

Copies of the Agreement and this amendment must be readily available at project worksites and must be presented when requested by a Department representative or agency with inspection authority.

If you have any questions regarding this matter, please contact Suzanne Gilmore, Environmental Scientist, at (707) 944-5536 or Suzanne.Gilmore@wildlife.ca.gov.

Sincerely,



Craig J. Weightman
Environmental Program Manager
Bay Delta Region

cc : Kristine Gaspar - Kristine.Gaspar@ghd.com
Mason - Mason@watertransit.org
Lieutenant Longwell
Warden Keiser



State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5520
www.dfg.ca.gov

EDMUND G. BROWN, Jr. Governor
JOHN McCAMMAN, Director



CITY OF VALLEJO

AUG 10 2011

PUBLIC WORKS DEPT

August 9, 2011

Mr. David Kleinschmidt, Public Works Director
City of Vallejo
555 Santa Clara Street
Vallejo, CA 94590

Subject: Final Lake or Streambed Alteration Agreement
Notification No. 1600-2011-0028-R3
Vallejo – Baylink Ferry Maintenance Facility

Dear Mr. Kleinschmidt:

Enclosed is the final Streambed Alteration Agreement ("Agreement") for the Vallejo – Baylink Ferry Maintenance Facility ("Project"). Before the Department may issue an Agreement, it must comply with the California Environmental Quality Act ("CEQA"). In this case, the Department, acting as a responsible agency, filed a notice of determination ("NOD") on August 9, 2011 based on information contained in the Initial Study / Subsequent Mitigated Negative Declaration the lead agency prepared for the Project.

Under CEQA, filing a NOD starts a 30-day period within which a party may challenge the filing agency's approval of the project. You may begin your project before the 30-day period expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Mitsuko Grube, Environmental Scientist, at (707) 944-5559 or mgrube@dfg.ca.gov.

Sincerely,

for James Starr
Environmental Program Manager
Bay Delta Region

cc: Lieutenant Mason
Warden Keiser
Mitsuko Grube

CALIFORNIA DEPARTMENT OF FISH AND GAME
BAY DELTA REGION
7329 SILVERADO TRAIL
NAPA, CALIFORNIA 94558
(707) 944-5520
WWW.DFG.CA.GOV



STREAMBED ALTERATION AGREEMENT
NOTIFICATION No. 1600-2011-0028-R3
MARE ISLAND STRAIT / NAPA RIVER

CITY OF VALLEJO & BAYLINK
BAYLINK - VALLEJO FERRY MAINTENANCE FACILITY

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Game (DFG) and City of Vallejo & Baylink (Permittee) as represented by Mr. David Kleinschmidt.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified DFG on February 7, 2011 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, DFG has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement

PROJECT LOCATION

The project is located at Mare Island Strait / Napa River, in the County of Solano, State of California; Latitude 38.1006°, Longitude 122.2692°, U.S. Geological Survey (USGS) map Mare Island. Physical location is Assessors Parcel Number 0066-050-100. The project site is located on the east side of the Mare Island Strait / Napa River. The physical address is Building 165 Waterfront Avenue, Mare Island, Vallejo, CA 94592.

PROJECT DESCRIPTION

The project is limited to the development of a new ferry maintenance facility (Facility) for the Vallejo Ferry system, owned by the City of Vallejo and operated by the Blue and Gold Fleet. The Facility will include an administration office, and maintenance, fueling and berthing to replace an existing insufficient facility just northwest of the project site. For clarity, the project can be divided into two categories: "waterside" and "landside" project activities.

"Waterside" project activities are limited to a facility of four new full service berths and two mooring-only berths for the ferry vessels. A third mooring berth, adjacent to the quay wall, would only be used in the event that a large land-based crane was necessary for a repair, such as removing the engine. The facility will be designed for six vessels. The berths will be constructed with floating docks and guide piles. An existing 4,080 square-foot maintenance float will be used to permit direct access for work at three of the berths. The maintenance float is currently tied to the sea wall at the existing facility and would be relocated to the new Facility and secured with piles, as part of the project. All four full service berths will have utility connections including fuel, potable water, sewage disposal, shore power, urea, bilge water, waste oil, lube oil and compressed air. Additionally hose bibs will be co-located as a "tee" to the potable water risers to facilitate wash down of the vessels. A maximum of 54 piles will be placed into the water.

Other elements of the waterfront facility will include lighting, power, a tool shed, ship's store shed, diver access platform, access gangway, security systems, communications systems, and a jib crane. An emergency generator may be installed, as well as power feedback capability from the vessels.

"Landside" project activities are limited to the relocation of the administration office, fencing, security system, electrical improvements, fueling facility and boom storage. Building 165 would be restored and Building 855 would be demolished and replaced with a new warehouse. The fueling facility would serve the fuel storage and delivery needs for the Vallejo Ferry system and includes a truck pad for fuel delivery, underground storage tanks, pipeline for dispersal of fuels and removal of wastes. The proposed fueling system would expand the current system capacity to allow a better diesel fuel rate and to take larger and potentially less frequent deliveries. The fueling storage system will consist of approximately 48,000 gallons of diesel storage, 2,000 gallons of clean lube oil, 4,000 gallons of oily bilge water, 4,000 gallons of dirty lube oil, and 6,000 gallons of urea. The products will be contained in a combination of new and existing tanks, with the existing tanks being relocated from the existing maintenance facility to the new facility. The arrangement of fuel tanks will be four 12,000 gallon above-ground tanks located in below grade vaults.

Equipment and Machinery Used During Construction:

Waterside: crane-mounted barge with pile-driving equipment, a tug boat, 3-4 small work boats, 1-2 floating work platforms, and equipment barge tied to the crane barge.

Landside: large excavator, sheet piles shoring for below grade vaults, generator, concrete trucks and mixers, crane for building roof.

PROJECT IMPACTS

Without inclusion of these protective measures, existing fish or wildlife resources the project could substantially adversely affect include: Central Valley steelhead (*Oncorhynchus mykiss*), Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), Central Valley fall/late fall-run Chinook salmon (*Oncorhynchus mykiss*), delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), green sturgeon (*Acipenser medirostris*), Sacramento splittail (*Pogonychthys macrolepidotus*) and pallid bat (*Antrozous pallidus*).

The adverse effects the project could have on the fish or wildlife resources identified above include: Hydroacoustic impacts to fish by pile driving (temporary), change in turbidity due to construction (temporary).

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to DFG personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to the Construction Site Manager and Foreman, who will be working on the project at the project site on behalf of Permittee, and the biological monitor.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify DFG if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, DFG shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that DFG personnel may enter the project site at any time to verify compliance with the Agreement.

- 1.5 Private Property. To the extent that any provisions of this Agreement provide for activities that require the Permittee to traverse another owner's property, such provisions are agreed to with the understanding that the Permittee possesses the legal right to so traverse. In the absence of such right, any such provision is void.
- 1.6 Work Site Inspection: DFG personnel or its agents may inspect the work site at any time in the duration of the construction or monitoring phases of this project. Proper safety measures shall be worn by DFG personnel during inspection (i.e. hard hats, safety vests) provided by the Permittee or Construction Site Manager.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

- 2.1 All in-channel work shall be confined to the period of July 1 to October 30.
- 2.2 All work shall be done according to the plans submitted to DFG with the project Notification package.
- 2.3 All work, species monitoring and mitigation shall be done according to the Notification received by DFG, as well as the Subsequent Mitigated Negative Declaration dated February 2011 and revised May 2011, State Clearinghouse Number 2011022039 unless otherwise noted in this Agreement. The Permittee shall notify DFG of any modifications made to the plans submitted to the DFG. Modifications to the project description may require an Amendment to this Agreement.
- 2.4 Preconstruction surveys and avoidance measures will be implemented in accordance with Mitigation Measures included in the Subsequent Mitigated Negative Declaration, dated February 2011 and revised May 2011, State Clearinghouse Number 2011022039.
- 2.5 The project site has been identified as an area that is potentially inhabited by threatened and endangered species. This agreement does not allow for the take, or incidental take of any State or Federal listed threatened or endangered listed species. The Permittee is required, as prescribed in the State or Federal endangered species acts, to consult with the appropriate agency prior to commencement

of the project. Any unauthorized take of such listed species may result in prosecution.

- 2.6 The Permittee shall conduct an employee orientation program for all persons who will work on-site during all project activities. The orientation program shall consist of a brief presentation from a DFG approved biologist about the biology of the species listed in this Agreement, their habitat needs, and their status under the California Endangered Species Act and DFG Species of Special Concern designation.
- 2.7 A DFG approved biologist will be present during all pile driving events. The biologist shall abide by all safety requirements of the Permittee. If, at any time during a pile driving event more than 10 fish are observed dead, as seen floating at the surface, within 50 meters from the pile, the pile driving will cease for 30 minutes. The pile driving may proceed after 30 minutes and the biologist will again observe. If, additional mortality is noted, pile driving will cease and DFG will be contacted as defined in the "Contact Information" section of this Agreement. All sensitive fish species shall be collected by the biologist to be retained and preserved for submittal to DFG, if requested.
- 2.8 All temporary and permanent piles shall be a maximum of 42" and shall be set using a vibratory hammer only, where feasible. Due to the uncertainty of using vibratory hammer only, a Hydroacoustic Minimization/Mitigation Plan, and a Hydroacoustic Monitoring Plan must be submitted to DFG for approval prior to construction.
- 2.9 Any mechanical equipment operated in the waterway shall not be submerged to a point above any axle of said mechanical equipment. Excavation equipment buckets may reach out into the waterway for the purpose of removing accumulated sediments or the retrieval of lost equipment.
- 2.10 No phase of the project may be started if that phase and its associated erosion control measures cannot be completed prior to the onset of a storm event if that construction phase may cause the introduction of sediments into the waterway. Seventy-two-hour weather forecasts from the National Weather Service shall be consulted prior to start up of any phase of the project that may result in sediment runoff to the waterway.
- 2.11 All exposed/disturbed areas within the project site shall be stabilized to the greatest extent possible. Erosion control measures, such as,

silt fences, straw hay bales, gravel or rock lined ditches, water check bars, and broadcasted straw shall be used where ever silt laden water has the potential to leave the work site and enter State waters. Erosion control measures shall be monitored during and after each storm event. Modifications, repairs and improvements to erosion control measures shall be made whenever it is needed.

- 2.12 Passage of sediment beyond the sediment barrier is prohibited. If the sediment barrier fails to retain sediment, corrective measures shall be employed, and DFG notified, as defined in the "Contact Information" section of this Agreement.
- 2.13 Poured concrete shall be excluded from the wetted channel for a period of 30 days after it is poured. During that time the poured concrete shall be kept moist, and runoff from the concrete shall not be allowed to enter a live waterway. Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is dry.
- 2.14 Any equipment or vehicles driven and/or operated within or adjacent to the waterway shall be checked and maintained daily to prevent leaks of materials that if introduced to waters could be deleterious to aquatic life, wildlife, or riparian habitat.
- 2.15 Staging and storage areas for equipment, materials, fuels, lubricants and solvents, shall be located outside of the stream channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the waterway shall be positioned over drip-pans. Any equipment or vehicles driven and/or operated within or adjacent to the waterway must be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. Vehicles must be moved away from the waterway prior to refueling and lubrication.
- 2.16 Any hazardous or toxic materials that could be deleterious to aquatic life that could be washed into State waters or its tributaries shall be contained in water tight containers or removed from the project site.
- 2.17 Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the State. Any of these materials,

placed within or where they may enter a waterway, by Permittee or any party working under contract, or with the permission of the Permittee, shall be removed immediately.

- 2.18 Structures and associated materials not designed to withstand high water flows shall be moved to areas above high water before such flows occur.
- 2.19 Prior to demolition work commencing at the Building 855 site, the building shall be surveyed for roosting bats and native birds by a DFG approved biologist. If bats or birds are found, work on the building operations shall cease. Bats or birds shall not be disturbed without specific notice to and consultation with DFG. DFG reserves the right provide additional provisions to this Agreement designed to protect nesting/roosting bats and birds.
- 2.20 If, in the opinion of DFG, conditions arise, or change, in such a manner as to be considered deleterious to the waterway or wildlife, operations shall cease until corrective measures approved by DFG are taken.

3. Compensatory Measures

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee shall implement each measure listed below.

- 3.1 To protect and maintain sensitive in-water habitat and to ensure a "No Net Loss" in wildlife value or acreage, the Permittee shall submit to DFG a mitigation plan, which amounts to a 3:1 ratio for the square footage of bed impacted by the pile structures (i.e. remove 3 piles for every 1 pile installed), or shall purchase a minimum of 0.02 acre of credits of shallow water habitat at a DFG approved mitigation bank. The plan and location of the mitigation must be approved in writing by DFG prior to construction. The mitigation area must be as close to the work site as is possible, preferably in the same drainage. Work on the waterway shall not begin until DFG has approved the mitigation location or has received a receipt documenting the purchase of the required mitigation. As an alternative the Permittee can issue DFG a Letter of Credit covering the cost of the mitigation and fees associated with completing the assigned mitigation.
- 3.2 To protect and maintain sensitive species and to ensure a "No Net Loss" in wildlife value or acreage, the Permittee shall submit to DFG a mitigation plan, which amounts to a 3:1 ratio for the square footage of area impacted by the hydroacoustics of pile driving, or shall

purchase a minimum of one acre of credit of shallow water habitat at a DFG approved mitigation bank. The plan and location of the mitigation must be approved in writing by DFG prior to construction. The mitigation area must be as close to the work site as is possible, preferably in the same drainage. Work on the waterway shall not begin until DFG has approved the mitigation location or has received a receipt documenting the purchase of the required mitigation. As an alternative the Permittee can issue DFG a Letter of Credit covering the cost of the mitigation and fees associated with completing the assigned mitigation. If the hydroacoustic impacts are reduced from what is currently estimated, as a result of a reduced number of installed piles, the purchase of a minimum of one acre of credit could be reduced, upon DFG approval.

4. Reporting Measures

Permittee shall meet each reporting requirement described below.

- 4.1 The Permittee/Contractor shall provide DFG a detailed construction schedule with complete construction plans prior to construction for approval by DFG. The schedule shall identify the approximate beginning and completion date for each activity within the waterway zone. The construction schedule shall be sent via mail to the Regional office at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG. The names, phone numbers, cellular phone numbers, pager numbers of key personnel shall be included in this notification.
- 4.2 The Permittee will notify DFG in writing of the dates of commencement and completion of operations within five days prior to such commencement or completion.
- 4.3 A Hydroacoustic Minimization/Mitigation Plan (Plan) shall be submitted to DFG for approval prior to construction. The Plan shall include mitigation and minimization measures. The Hydroacoustic Minimization/Mitigation Plan shall be sent via mail to the Regional office at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG.
- 4.4 A Hydroacoustic Monitoring Plan (Plan) shall be submitted to DFG for approval prior to construction. A final report shall be submitted within 30 days of completion. The Hydroacoustic Monitoring Plan shall be sent via mail to the Regional office at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG.

- 4.5 All temporary and permanent pile driving within 10 meters of the wetted channel shall be monitored (peak, rms, and SEL). Variations in substrate, water depth and pile driving intensity may increase peak SPLs above lethal levels and monitoring will allow the operator to modify pile driving activities and effectively implement appropriate minimization measures. Hydroacoustic data shall be submitted to DFG every other Monday. This data shall be submitted via email to mgrube@dfg.ca.gov. The Permittee shall report the distance to the 187 dB (SEL_{accumulated}) contour for each day of pile driving.
- 4.6 The Permittee shall monitor appropriate implementation of hydroacoustic minimization methods daily and shall provide DFG a written log on a biweekly basis. The written log shall be sent to DFG every other Monday via email to mgrube@dfg.ca.gov.
- 4.7 The Permittee shall prepare an Erosion Control Plan and submit it to DFG for approval prior to start of construction. Erosion control measures shall be utilized throughout all phases of operation where sediment runoff from exposed slopes threatens to enter waters of the State. At no time shall silt laden runoff be allowed to enter the waterway or directed to where it may enter the waterway. The Erosion Control Plan shall be sent via mail to the Regional office at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG.
- 4.8 An Accidental Spill and Discharge Plan shall be prepared and submitted to DFG prior to the start of construction. The Plan shall identify the actions which will be taken in the event of spill of petroleum products, or other material harmful to aquatic or plant life, and the emergency response materials which will be kept at the site to allow the rapid containment and clean-up of any spilled materials. The Accidental Spill and Discharge Plan shall be sent via mail to the Regional office at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG.
- 4.9 Prior to commencement of work within the waterway zone, the Permittee shall photograph the project site from a designated photo-station. Upon completion of work activities, the Permittee shall photograph the project site. Labeled copies of photographs shall be sent to DFG within 30 days of completion of the project. Photographs shall be sent to DFG at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG.
- 4.10 The Permittee shall provide DFG with a biweekly status report on all activities authorized by this Agreement. The status report shall list

the schedule of events (beginning dates, work in progress, and completion dates). The status report shall be submitted to DFG every other Monday until the list of authorized activities is complete or there are scheduled periods of inactivity. The status report shall be sent via email transmittal to mgrube@dfg.ca.gov.

- 4.11 If any sensitive species are observed in project surveys, the Permittee shall submit Natural Diversity Data Base (NDDDB) forms to the NDDDB for all preconstruction survey data within five working days of the sightings, and provide DFG Region 3 with copies of the NDDDB forms and survey maps.
- 4.12 As-built construction plans will be submitted to DFG within 30 days of completion of construction. As-built construction plans shall be sent to DFG at 7329 Silverado Trail, Napa, CA 94558. Refer to Notification 1600-2011-0028-3 when notifying DFG.

CONTACT INFORMATION

Any communication that Permittee or DFG submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or DFG specifies by written notice to the other.

To Permittee:

Mr. David Kleinschmidt, Public Works Director
City of Vallejo
555 Santa Clara Street
Vallejo, CA 94590
Fax: (707) 648-4691
david@ci.vallejo.ca.us

To DFG:

Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Napa, California 94558
Attn: Lake and Streambed Alteration Program – Mitsuko Grube
Notification #1600-2011-0028-R3
Phone (707) 944-5520
Fax (707) 944-5553
mgrube@dfg.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute DFG's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

DFG may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before DFG suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before DFG suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused DFG to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes DFG from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects DFG's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but

not limited to, FGC sections 2050 et seq. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

DFG may amend the Agreement at any time during its term if DFG determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by DFG and Permittee. To request an amendment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter DFG approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to DFG a completed DFG "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). DFG shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of DFG's signature, which shall be: 1) after Permittee's signature; 2) after DFG complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire on December 31, 2015, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

EXHIBITS

The documents listed below are included as exhibits to the Agreement and incorporated herein by reference.

- A. Exhibit A – Waterfront Site Plan – 95% construction designs Sheet C2
- B. Exhibit B – Pile Coordination Schedule Sheet C3

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify DFG in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR CITY OF VALLEJO

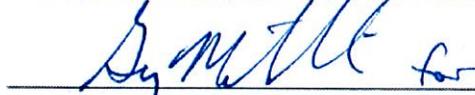


David Kleinschmidt
Public Works Director, City of Vallejo

8/3/2011

Date

FOR DEPARTMENT OF FISH AND GAME



James Starr
Environmental Program Manager

August 9, 2011

Date

Prepared by: Mitsuko Grube
Environmental Scientist

Date Prepared: May 4, 2011
Date Revised: June 16, 2011
Date Revised: July 28, 2011

Appendix B

Cultural Resources Correspondence

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: Vallejo Ferry Maintenance Facility, Submerged Lands Lease Agreement

County: Solano

USGS Quadrangle Name: Mare Island, Calif. 7.5

Township: 3 North. Range: 4 West. Section(s): 14

Company/Firm/Agency: URS Corp

Contact Person: Mark Hale

Street Address: One Montgomery Street, Suite 900

City: San Francisco Zip: 94014

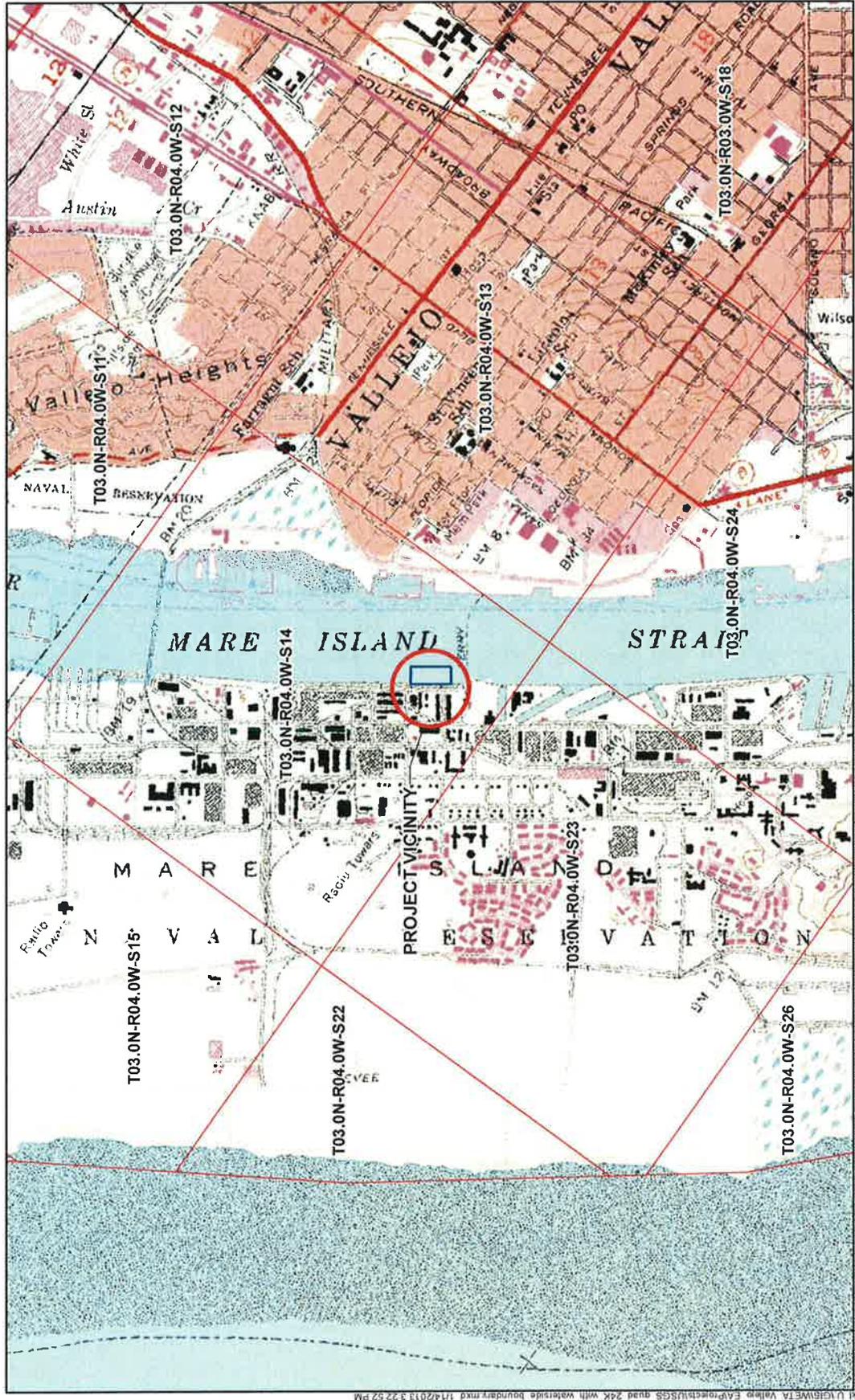
Phone: 415-243-3826

Fax: 415-882-9261

Email: mark.hale@urs.com

Project Description: The Proposed Action is the issuance of a lease agreement for a portion of Navy-owned submerged lands for the construction and operation of the new Vallejo Ferry Maintenance Facility in-water components on Mare Island, in Vallejo, California.

Post-it® Fax Note	7671	Date	1-16-13	# of pages	2
To	STAFF	From	MARK HALE		
Co./Dept.	NAHC	Co.	URS		
Phone #	916-653-4082	Phone #	415-243-3826		
Fax #	916-657-5390	Fax #	415-882-9261		



Source: USGS 7.5-minute quadrangles; Mare Island (1981), Cuttings Wharf (1981) and Banca (1981), Waterside project boundary; GHD, 2013; Sections, California Mapping Coordinating Committee, 2003.

- Waterside project boundary
- Project vicinity
- Section



VALLEJO FERRY MAINTENANCE FACILITY EA

January 2013
Vallejo, California

FIGURE 1

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-6390



January 23, 2013

Mark Hale
URS Corp
One Montgomery Street, Ste 900
San Francisco, CA 94014

Sent by Fax: 415-882-9261

Number of 2

Re: Vallejo Ferry Maintenance Facility, Submerged Lands Lease Agreement, Solano County

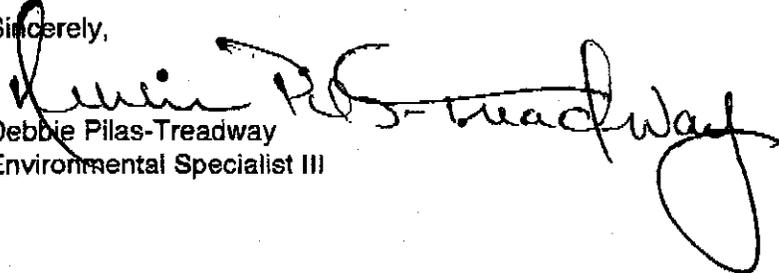
Dear Mr. Hale:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,


Debbie Pilas-Treadway
Environmental Specialist III

**Native American Contacts
Solano County
January 23, 2013**

Kesner Flores
PO Box 1047
Wheatland , CA 95692
calnagpra@hotmail.com
925-586-8919

Wintun / Patwin

Yocha Dehe Wintun Nation
Cynthia Clarke, Native Cultural Renewal Committee
P.O. Box 18
Brooks , CA 95606
(530) 796-3400 - office
(530) 796-2143 Fax

Wintun (Patwin)

Cortina Band of Indians
Charlie Wright, Chairperson
PO Box 1630
Williams , CA 95987
(530) 473-3274 - Voice
(530) 473-3190 - Voice
(530) 473-3301 - Fax

Wintun / Patwin

Yocha Dehe Wintun Nation
Reno Franklin, Cultural Resources Director
P.O. Box 18
Brooks , CA 95606
rfranklin@yochadehe-nsn.gov
(530) 979-6346
(530) 796-3400 - office
(530) 796-2143 Fax

Wintun (Patwin)

Cortina Wintun Environmental Protection Agency
P.O. Box 1630
Williams , CA 95987
corwepa@yahoo.com
(530) 473-3318
(530) 473-3319
(530) 473-3301 - Fax

Wintun (Patwin)

Yocha Dehe Wintun Nation
Marshall McKay, Chairperson
P.O. Box 18
Brooks , CA 95606
(530) 796-3400
(530) 796-2143 Fax

Wintun (Patwin)

Yocha Dehe Wintun Nation
Leland Kinter, Native Cultural Renewal Committee
P.O. Box 18
Brooks , CA 95606
lkinter@yochadehe-nsn.gov
(530) 979-6346
(530) 796-3400 - office
(530) 796-2143 Fax

Wintun (Patwin)

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Vallejo Ferry Maintenance Facility project, Solano County

Appendix C

VALLEJO FERRY MAINTENANCE FACILITY PROJECT

MITIGATION MONITORING AND REPORTING PROGRAM

(From Winzler & Kelly, 2011: Initial Study/Mitigated
Negative Declaration, Vallejo-Baylink Ferry Maintenance
Facility, Mare Island, City of Vallejo, California)

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
IV. BIOLOGICAL RESOURCES					
<p>Mitigation Measure BIO-1. Protection of Pallid Bat</p> <p>Two weeks prior to demolition of Building 855, or rehabilitation of Building 165, the City shall have a qualified biologist survey the building to determine whether or not it is occupied by roosting bats or native birds (e.g., barn owl, <i>Tyto alba</i>). If roosting bats or native nesting birds are found Fish & Game shall be contacted to determine the next action. The City may also opt to survey the building during the winter, verify the building is unoccupied, remove any bats or birds if the building is occupied and then board the windows and other openings to prevent bats and birds from entering and nesting between February and August.</p>	Conduct surveys.	City of Vallejo	Report of findings submitted to City.	Construction cannot begin.	
<p>Mitigation Measure BIO-2. Minimize Impacts to Salmonids and Sensitive Aquatic Species during Construction</p> <p>The City shall incorporate the following into the construction documents: Identify the minimum amount of piles that would require an impact hammer based on the results of the Geotechnical Investigation. The smallest size hammer, and the fewest strikes necessary, shall be used for installation (it could be that piles are initially driven with a vibratory hammer and then the final strikes are completed with an impact hammer during the final seating of the pile). A weighted block net shall be used to exclude most fish from the immediate work area. The block net shall be</p>	<p>Incorporate into Construction Documents.</p> <p>Ongoing During Construction</p>	<p>City of Vallejo</p> <p>Construction Manager</p>	<p>Verify included in Construction Documents.</p> <p>Monitoring during construction.</p>	<p>Do not bid.</p> <p>Stop work until compliance.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
shifted as the work area shifts. Alternatively, a bubble curtain may be used if water depth or currents make a block not infeasible. Construction within Mare Island Strait shall be limited to the period from July 15 to November 30.					

V. CULTURAL RESOURCES

<p>Mitigation Measure CR-1. Preserve all Distinctive Historic Materials, Features, Finishes and Examples of Craftsmanship</p> <p>Deteriorated historic features must be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature must match the old in design, color, texture, and where possible materials. Specifically:</p> <ol style="list-style-type: none"> 1) Color samples of Baylink Blue and Baylink Green shall be submitted to the Secretary of the AHCL for review and approval. 2) All original windows removed for this project shall be stockpiled within the historic building for possible future use. 3) The Secretary of the AHCL shall approve the detailed landscaped plans and light fixtures for the future parking lot. 4) Light fixtures on the front of the building shall be restored. If restoration is unachievable, replacement lights shall be approved by the Secretary of the AHLC. 	Review and approval of submittals/plans.	Planning Department	Prior to issuance of building permit.	Deny issuance of building permit.	
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**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>Mitigation Measure CR-2. Ensure that any Project Changes are in Compliance with Secretary of the Interior’s Standards for the Treatment of Historic Properties and the Mare Island Historic District Design Guidelines.</p> <p>To ensure that the final project design is in accordance with the <i>Project Guidelines</i>, any changes to the design of the project made subsequent to the November 18, 2010 review and decision by the AHCL shall be reviewed by City Staff for consistency with <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties</i> and the <i>Mare Island Historic District Design Guidelines</i>. If determined by staff to be necessary, the changes shall be approved by the AHCL under the Certificate of Appropriateness process.</p>	<p>Review and approval of submittals/plans.</p>	<p>Planning Department</p>	<p>Prior to issuance of building permit.</p>	<p>Deny issuance of building permit.</p>	
<p>Mitigation Measure CR-3. Treatment of Archaeological Resources Discovered during Construction</p> <p>If historic features or prehistoric archaeological materials are encountered during project construction, the procedures outlined in the <i>Archaeological Treatment Plan for Mare Island</i> (PAR Environmental Services 2000b) shall be followed: specifically the steps outlined in the following treatment measure TM-9 New Discovery.</p> <p>Prior to construction an archaeologist should attend a tailgate meeting with the construction foreman and crew to discuss characteristics of potentially significant deposits. If archaeological</p>	<p>On-site observation.</p>	<p>City of Vallejo</p>	<p>During construction.</p>	<p>Stop work.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>properties (e.g., trash pits, brick foundations, dark soil containing shell, bone and stone) are encountered during construction, then ground disturbing activities in the immediate vicinity of the find shall be halted until the discovery has been examined by a qualified archaeologist. If the deposit or features appear to meet CEQA or National Register of Historic Places criteria as a legally significant deposit, then archaeological data recovery (TM-4 and TM-5) shall be implemented expeditiously so that construction work can continue with minimal delay.</p>					
<p>Mitigation Measure CR-4. Protection and Preservation of Significant Paleontological Resources</p> <p>If concentrations of paleontological resources (e.g. plant and animal fossil specimens and fossil-bearing rock units) are encountered during construction, the City shall halt ground-disturbing work in the vicinity of the find. Work near such finds shall not be resumed until a qualified paleontologist has evaluated the materials and offered recommendations for further action.</p>	<p>On-site observation.</p>	<p>City of Vallejo</p>	<p>During construction.</p>	<p>Stop work.</p>	
<p>Mitigation CR-5. Treatment of Human Remains, Associated Grave Goods, or Items of Cultural Patrimony</p> <p>If human remains are encountered during construction activities, there shall be no further excavation or disturbance of the remains, or nearby area until the Solano County Coroner has made the necessary findings as to origin, in accordance with</p>	<p>On-site observation.</p>	<p>City of Vallejo</p>	<p>During construction.</p>	<p>Stop work.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>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 shall contact, by telephone within 24 hours the Native American Heritage Commission. The Native American Heritage Commission shall immediately notify the most likely descendent (MLD). The descendent shall 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 descendents shall complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The remains shall not be damaged or disturbed by further development until the County has discussed and conferred with the MLD regarding their recommendations.</p>					

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
VI. GEOLOGY & SOILS					
<p>Mitigation Measure GEO-1. Design Level Geotechnical Investigation</p> <p>Design and construction shall address the recommendations made in site specific design-level geotechnical reports prepared for the Project. The geotechnical recommendations shall be incorporated into the final plans and specifications for the project and implemented during construction. Recommendations from the Draft 2011 Geotechnical Report for the project include, but are not limited to, the following:</p> <p><i>Seismic Design.</i> In accordance with the 2010 California Building Code, the seismic site classification shall be based on average soil properties in the upper 100 feet. For analyses in accordance with the 2010 CBC, the site shall be classified as Site Class C. Recommended ground motion parameters for the site are provided in the Draft 2011 Geotechnical Report.</p> <p><i>Expansive Soils.</i> Risks associated with expansive soils shall be addressed by modifying or improving the subgrade soils and deepening foundations. Typical alternatives may include removing the upper 12 inches of expansive soil below proposed buildings and replacing them with imported "non-expansive" fill, or overexcavating, moisture conditioning and recompacting the native soils to a depth of approximately 18 inches under strict quality control guidelines. The zone of "non-expansive" fill or moisture conditioned native soils</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

**VALLEJO FERRY MAINTENANCE FACILITY PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>should extend at least 5 feet outside the perimeter of the proposed buildings and at least 3 feet outside the perimeter of the proposed pavement areas. Additional recommendations are provided in the Draft 2011 Geotechnical Report.</p> <p>Underground Vaults. Vault design shall take into account buoyancy. For design purposes, a depth to groundwater of 6 feet below the existing ground elevation at the vault location shall be used, and the vault design shall consider hydrostatic pressures on the vault walls.</p> <p>Below Grade Structures. Below-grade vaults shall be designed to resist the lateral earth pressures exerted by the retained, compacted backfill plus any additional lateral force that will be applied to the wall due to surface loads placed at or near the wall. Wall backfill should be free draining and provisions should be made to collect and dispose of excess water that may accumulate behind earth retaining structures. Additional recommendations are provided in the Draft 2011 Geotechnical Report and shall be implemented during construction.</p> <p>Grading. After removal of existing pavements, the exposed soil beneath the proposed new pavements and structural areas shall be removed to a depth of three feet below the proposed subgrade elevation and screened to remove oversized, objectionable, or deleterious materials before it is replaced as engineered fill. Following site stripping and any required grubbing and/or overexcavation, all areas to receive engineered fill or to be used for the future support of structures or concrete slabs</p>					

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Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>supported-on-grade shall be scarified to a depth of 8 inches, uniformly moisture-conditioned to between 2 and 5 percent above the optimum moisture content, and compacted to between 88 and 92 percent of the maximum dry density as determined by ASTM (American Society for Testing and Materials) Test Method D 1557'. The upper 12 inches of pavement subgrade should be scarified, moisture conditioned, and compacted to at least 95 percent relative compaction.</p> <p>Shallow Foundations. Foundations for the proposed warehouse building shall be constructed of reinforced concrete, and founded on the shale and siltstone bedrock encountered in the borings. For these structures, footings should be a minimum of 18 inches wide and embedded a minimum of 36 inches below the lowest final adjacent subgrades. Additional recommendations, including allowable bearing pressures using the above minimum dimensions, are presented in the Draft 2011 Geotechnical Report and shall be implemented during construction.</p> <p>Dock Pile Foundations. Single dock and fender piles shall require bracing to reduce deflections and the potential for unrecoverable ground deformations at the pile sockets. Dock pile foundations shall be constructed in accordance with the engineering analysis to be performed for the project.</p>					

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VII. HAZARDS AND HAZARDOUS MATERIALS					
<p>Mitigation Measure HAZ-1. Contaminated Materials Handling and Disposal</p> <p>Planned subsurface disturbances shall follow specific procedures and protocols outlined in the SGWMP prepared for the Eastern Early Transfer Parcel of the Lennar Mare Island site (CH2MHILL 2001). 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.</p> <p>Soils shall be stockpiled and characterized to determine suitability for re-use at the site or to determine appropriate methods of disposal off-site. Groundwater shall be containerized for chemical analysis, and depending on analytical results, shall 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 shall be obtained from the Vallejo Sanitation and Flood Control District, and the discharge shall be managed in accordance with permit conditions, including flow rates, discharge hours, and concentrations limits for hydrocarbons, sediment, and other potential constituents.</p> <p>The City shall require the Contractor to submit a site-specific Work Plan providing details of how</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

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<p>soil and groundwater will be managed. The Work Plan shall conform to the SGWMP for Lennar Mare Island. The Work Plan shall be submitted to the City and the Department of Toxic Substances Control for approval, prior to excavating. The Work Plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> • 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. 					

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<p>Mitigation Measure HAZ-2. Lead Abatement</p> <p>The abatement and clean up of lead and heavy metals includes removing loose lead paint on building structural and architectural components and finishes to remain and then stabilizing them by surface preparation, priming, and finish coat painting. As many of these are historical surfaces, this shall be accomplished in accordance to a specification prepared and/or approved by the historical architect and applied by lead qualified painters.</p> <p>Contract documents shall ensure that the renovation and demolition processes shall be conducted in a manner that creates the minimum amount of hazardous waste and leaves the site free of lead contamination exceeding regulatory levels.</p> <p>All construction activities impacting lead based paint and LCP must be performed in compliance with the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of lead containing/contaminated materials. The disturbance of these components during demolition and renovation activities will require use of personnel trained in lead hazards for construction and will require compliance with applicable Cal/OSHA regulation (Title 8, CCR, Section 1532.1) and Cal/EPA regulations for disposal of lead hazardous waste (22 CCR Division 4.5 Environmental Health Standards for Management of Hazardous Wastes).</p> <ul style="list-style-type: none"> All untested paints and coatings should be considered lead based paint or lead-based coatings 	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

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Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>in the absence of exhaustive sampling and laboratory analysis.</p> <ul style="list-style-type: none"> • Loose lead paint should be removed prior to general demolition of the building to minimize airborne dispersal of lead and site contamination. • Prior to any hot work (such as torch cutting) on painted metal surfaces, the paint either needs to be removed or supplied air respirators worn during welding or torch cutting operation. • All surface preparation and paint removal wastes must be considered hazardous wastes due to the likelihood of paint chip lead levels exceeding 1,000 total lead or 5 ppm soluble lead. All paint containing waste streams should be considered potentially lead hazardous pending waste testing. • Clean the exposed surfaces of all structural/non-structural building components, fixtures and equipment. • Remove and dispose of all non-permeable fixtures when cleaned as general construction debris. • Remove and dispose of all permeable fixtures and smelting equipment as Class 1 hazardous materials • Remove and dispose of all non-structural permeable building components as Class 1 or 2 hazardous materials (wood ceiling, second floor plywood flooring, non-structural walls and partitions and non-structural wood components). • Remove all utilities as general construction debris. 					

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Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<ul style="list-style-type: none"> Remove loose and peeling lead-based paint at building exterior. Lockdown all remaining surfaces with a coating of paint. This includes all brick walls, wood structural framing, steel framing and roofing. <p>Remove elements in the structure that are non-structural and clean the remaining structural elements to remove any lead that has seeped into the porous surfaces. This process will address the interior perimeter brick walls and the wood structural framing for the second floor.</p>					
<p>Mitigation Measure HAZ-3. Asbestos Abatement</p> <p>Prior to demolition construction activities, known or assumed ACMs that are likely to be disturbed by those activities, must be removed and disposed of in accordance all applicable regulations including the federal National Emissions Standard for Hazardous Air Pollutants (NESHAPS), the local designated enforcement authority for NESHAPS, the Bay Area Air Quality Management District (BAAQMD), and Cal/OSHA regulations. A Cal-OSHA registered and State licensed, registered asbestos contractor (abatement/demolition/roofing) is required for removal of ACM prior to general demolition and renovation.</p> <p>At minimum, the contractor’s abatement sub-contractor should remove all EPA category I & II non-friable ACM in a manner that does not produce friable ACM under Cal/OSHA Class II removal requirements and dispose of removed</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

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<p>materials as non-hazardous asbestos waste at a landfill permitted for asbestos waste disposal. The following additional requirements should be adhered to for any maintenance, renovation, or demolition projects requiring asbestos disturbance and/or removal:</p> <ul style="list-style-type: none"> • All asbestos-containing wastes shall be manifested as either hazardous or nonhazardous based on asbestos content, friability, and actual waste stream classification. For this project, all waste should be non-friable, non-hazardous asbestos waste if properly removed. • All asbestos removal should be overseen by a qualified independent third party retained by the building owner or manager of the site to ensure proper removal, clean up, work area clearance, and review waste shipping and disposal documentation. • Contractor should perform all work in compliance with contract documents and the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of asbestos. 					
<p>Mitigation Measure HAZ-4. Disposal of Universal Wastes</p> <p>All suspect and identified non-incandescent lamps, mercury lighting tubes and other universal wastes should be removed and recycled or disposed of in accordance with the guidelines established by the California Department of Toxic Substance Control Universal Waste Rule, as stated in 22 CCR Sections 66261.9 and 66273.1 thru 66273.90.</p>	<p>Incorporate into construction documents.</p>	<p>City of Vallejo</p>	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p>	<p>Can not advertise for bid.</p>	

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Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<p>Suspect PCB ballasts must be inspected for labeling and properly packaged for disposal as PCB ballasts unless marked as “No PCB’s” or “PCB Free.” Accumulations of avian fecal wastes and other biological wastes should be sanitized prior to general building demolition.</p>					
<p>Mitigation Measure HAZ-5. Building 165 Lease Restriction Revision Form</p> <p>Prior to occupancy, the notifications and restrictions itemized in the Finding of Suitability to Lease Technical Memorandum of January 31, 2001 shall be addressed. These include:</p> <ul style="list-style-type: none"> • Lessee notification regarding pending PCB survey/sampling/remediation – building not suitable for occupancy until complete. • PCB Free-Release required; • Lessee notification regarding access to IR sites; • Significant lessee notifications and restrictions regarding access, modifications, and usage of the building – requires permission of Navy prior to any action; • Lessee notification regarding additional notifications / restrictions upon completion of the environmental surveys which may delay occupancy approval; • Lessee notification regarding corrective action to be taken as result of Backflow Protection and Cross Connection Survey – lessee to perform these actions at own expense; and 	<p>Review environmental surveys and documentation.</p>	<p>City of Vallejo</p>	<p>Prior to issuance of Certificate of Occupancy.</p>	<p>Deny Certificate of Occupancy.</p>	

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Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
<ul style="list-style-type: none"> • Building Closed, parcel release required for sublease ingress / egress; <p>Once the necessary environmental surveys and outstanding issues have been completed, a Lease Restriction Revision Form shall be completed and approved by the Navy and Regulatory Agencies. The Lease Restriction Revision Form will modify the above mentioned notifications and restrictions.</p>					

VIII. HYDROLOGICAL AND WATER QUALITY

<p>Mitigation Measure HYD-1. Industrial Storm Water Pollution Prevention Plan</p> <p>The City shall obtain coverage under State Water Resources Control Board Order No. 97-03-DWQ, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities. This shall include submittal of a notice of intent to obtain permit coverage, and preparation, retention on site, and implementation of a Storm Water Pollution Prevention Plan. The Plan shall identify the sources of pollution that affect the quality of industrial storm water discharges and authorized non-storm water discharges, and describe and ensure the implementation of best management practices to reduce or prevent pollutants in industrial storm water discharges. The Plan shall also include a monitoring program and other requirements contained in Order No. 97-03. Implementation of the SWPPP shall include the necessary inspections, monitoring, and overall</p>	Prepare SWPPP.	City of Vallejo	<p>Verify incorporation into construction documents prior to advertising the bid for construction.</p> <p>Submit NOI to State Water Resources Control Board 30 days prior to the start of construction.</p>	<p>Can not advertise for bid.</p> <p>Cannot start construction.</p>	
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Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/Activity	Monitoring Compliance Record (Name/Date)
compliance.					

Appendix D

Record of Non-Applicability for the Clean Air Act

RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY VALLEJO FERRY MAINTENANCE FACILITY

BACKGROUND

This Record of Non-Applicability (RONA) documents the United States Department of the Navy's (Navy's) determination that the requirement to make a Clean Air Act conformity determination does not apply to the Proposed Action.

The U.S. Environmental Protection Agency (U.S. EPA) published "Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule," in the November 30 1993, Federal Register (40 Code of Federal Regulations [CFR] Parts 6, 51, and 93). The Navy published Clean Air Act Conformity Guidance in OPNAVINST 5090.1C, Appendix F, dated October 30, 2007. These publications provide implementing guidance to document Clean Air Act Conformity Determination requirements.

Federal regulations state that no department, agency, or instrumentality of the Federal Government shall engage in; support in any way; or provide financial assistance for, license, or permit, or approve any activity that does not conform to an applicable implementation plan. It is the responsibility of the Federal agency to determine whether a Federal action conforms to the applicable implementation plan before the action is taken (40 CFR Part 51.850[a]).

A Federal action is exempt from the requirement to make a conformity determination if the action fits one of the categories of actions identified at 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*. The Navy's Proposed Action is to lease submerged lands in the Mare Island Strait 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. 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. WETA currently operates its existing Ferry Maintenance Facility on Navy submerged lands in Mare Island Strait, approximately ½ mile directly northwest of the proposed lease area. As described further below, the Proposed Action fits one or more of the exemption categories at 40 CFR 93.153(c)(2), and therefore the requirement to prepare a conformity determination does not apply.

Federal actions may also be exempt from conformity determinations if they do not exceed designated *de minimis* levels for criteria pollutants (40 CFR Part 51.853[b]). Although the Proposed Action is categorically exempt from the conformity determination requirement under 40 CFR 93.153(c)(2), the Navy nevertheless evaluated the expected emissions of the Proposed Action against the *de minimis* thresholds to better quantify the relative impacts of the Proposed

Action. As described further below, because the anticipated emissions from the Proposed Action do not exceed the *de minimis* thresholds for the San Francisco Bay Area Air Basin, the Proposed Action would also be exempt from the conformity determination requirement under the *de minimis* exemption at 40 CFR 51.853(b).

PROPOSED ACTION

Action Proponent: United States Department of the Navy, Naval Facilities Engineering Command Base Realignment and Program Management Office, West (BRAC PMO West)

Location: Former Mare Island Naval Shipyard

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

Proposed Action Description:

WETA is relocating the Vallejo Ferry Maintenance Facility from its current location at Building 477, to Building 165 on Mare Island in the city of Vallejo, California. Ferry operations at the existing facility at Building 477, which is approximately ½ mile directly northwest of the newly proposed facility, would be terminated. The federally proposed action (Proposed Action) is the issuance of a 3.58-acre lease agreement for a portion of Navy-owned submerged lands, to enable the construction and operation of the new facility's in-water components in the Mare Island Strait in Vallejo, California. Although the Proposed Action is solely granting a submerged land-lease agreement, construction and operation of the in-water and on-land components of the facility are evaluated in this document, to assess and disclose potential indirect and cumulative effects of the lease.

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.

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, the analysis 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..

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 project site, 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 project site.

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. The estimated construction schedule for installation of the waterside improvements would be between August 1 and October 15.

Applicability of Exemption Categories:

As noted previously, the requirement to prepare a conformity determination does not apply to a Federal action if the action fits one or more of the exemption categories at 40 CFR 93.153(c)(2). The Proposed Action fits one or more of the exemption categories described below:

- (ii) *Continuing or recurring activities such as permit renewals where activities conducted will be similar in scope and operation to activities currently conducted.*

WETA currently operates a ferry maintenance facility above Navy submerged lands at the Former Mare Island Naval Shipyard, approximately ½ mile directly northwest of the newly proposed facility. The scope and nature of the activities at the new facility under the proposed lease will not differ materially from those at the existing facility.

- (xi) *The granting of leases, licenses such as for exports and trade, permits, and easements where activities conducted will be similar in scope and operation to activities currently being conducted.*

See item (ii) above.

- (xix) *Actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific, reasonable condition is met, such as promptly after the land is certified as meeting the requirements of CERCLA, and where the Federal agency does not retain continuing authority to control emissions associated with the lands, facilities, title, or real properties.*

The Proposed Action involves the transfer of an interest in real property via a lease. The lease action cannot occur unless and until the Navy prepares a “finding of suitability to lease” (FOSL) in consultation with the regulatory authorities pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120(h)(3)(B). The FOSL must evaluate whether the uses contemplated in the lease are consistent with protection of human health and the environment. In addition, the Navy must provide notification of the lease to the State of California, pursuant to CERCLA Section 120(h)(5). The Navy has notified the State of the proposed lease and has prepared a FOSL in coordination with the regulatory agencies. The lease could not be executed prior to completion of these CERCLA requirements. Once the lease issues, the Navy would not retain continuing authority over the day-to-day operations of the ferry maintenance facility or its emissions, other than ensuring compliance with requirements of the lease agreement. WETA is a non-federal transit authority, subject to its own operating requirements and authorities.

Air Emissions Summary:

Although the Proposed Action would be exempted under one of the exemption categories at 40 CFR 93.153(c)(2), the Navy nevertheless evaluated projected emissions from the Proposed Action against *de minimis* thresholds for the San Francisco Bay Area Air Basin, to better quantify the relative impacts from the action. The San Francisco Bay Area Air Basin is classified as a nonattainment area for the 24-hour particulate matter less than or equal to 2.5 microns in diameter (PM_{2.5}) standard and the 8-hour ozone standard. Solano County is designated as a maintenance area for carbon monoxide (CO). *De minimis* levels (in tons/year) for the air basin potentially affected by the Proposed Action are listed in Table 1.

**Table 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, 2013. *General Conformity De Minimis Levels*. Available online at: <http://www.epa.gov/oar/genconform/deminimis.html>.

Notes:

GCR = General Conformity Rule; N/A = Not Applicable; NO_x = oxides of nitrogen; PM₁₀ = 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; 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.

The Proposed Action would not have a direct impact on air quality or greenhouse gas emissions. However, execution of the submerged land lease would indirectly create air quality emissions related to construction and operation of the waterside activities at the maintenance facility.

Operation of construction equipment would contribute to increased emissions of CO, oxides of nitrogen), particulate matter less than or equal to 2.5 microns in diameter, PM_{2.5}, sulfur dioxide, and volatile organic compounds. Construction emissions were analyzed to determine whether General Conformity Rule (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 the duration of construction activities. Table 2 describes the equipment and duration assumed for the emission calculations.

**Table 2
Construction Equipment Activity Assumptions**

Equipment Type	Quantity	Size (Hp)	Hours per Day	Days¹	Duty Cycle
Barge-Mounted Crane	1	200	8	55	45%
Tugboat	1	400	8	55	45%
Small Work Boat	4	100	8	55	45%
Equipment Barge	1	450	8	55	50%
Vibratory Hammer	1	75	8	55	62%

¹ Days of construction calculated based on 5 days per week work from August 1 through October 15.

As shown in Table 3, the construction emissions calculated for the Proposed Action would be well below the applicable GCR threshold emission rates. Therefore, construction of the Proposed Action would be below conformity *de minimis* levels.

**Table 3
Estimated Worst-Case Annual Emission Rates for Construction and
Applicable GCR Emission Threshold Rates**

Pollutant	Emission Rate (ton/year)	GCR Emission Threshold Rate¹ Nonattainment (tons/year)	Exceed Threshold?
carbon monoxide	0.57	100 (maintenance area)	no
NO _x	0.78	100 (marginal nonattainment, ozone precursor)	no
PM ₁₀	0.04	N/A	N/A
PM _{2.5}	0.03	100	no
sulfur dioxide	< 0.001	N/A	N/A
VOC	0.07	100 (marginal nonattainment, ozone precursor)	no

Source: U.S. EPA, 2013

Notes:

GCR = General Conformity Rule; NO_x = oxides of nitrogen; PM₁₀ = 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.

Increased emissions from the operation of the ferry terminal are expected to be negligible. The waterside facility would 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 at the existing ferry maintenance facility, ½ mile northwest of the newly proposed facility. The Vallejo-Baylink ferry system has three vessels that currently circulate between the existing maintenance facility and the Bay Area ferry terminals. The Proposed Action would not result in additional vessels, nor any increase in distance traveled by vessels, nor would it 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. Although this does not currently occur at the existing Mare Island ferry maintenance facility, there would be no additional vessel trips associated with passenger uses, because passengers would ride on ferries that already cross Mare Island to 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. In summary, no material change in operational emissions is projected to result from the Proposed Action, and an increase in emissions over existing conditions, if any, would be below the conformity determination *de minimis* thresholds.

EMISSIONS EVALUATION AND CONCLUSION

The Proposed Action is to lease submerged lands in the Mare Island Strait to enable WETA to construct and operate a ferry maintenance facility. The lease would result in indirect air impacts from the construction and operation of the facility. The Proposed Action fits one or more of the exemptions found at 40 CFR 93.153(c)(2), and therefore the requirement to prepare a conformity determination does not apply. Emissions from construction equipment were nevertheless calculated, based on the assumptions shown in Table 2 and using average fleetwide emission factors from the California Air Resources Board's latest emissions models, OFFROAD2011 and Haborcraft model for calendar year 2014. It was determined that there will be no material change in operational emissions relative to the existing ferry maintenance facility at Mare Island. Overall, the *de minimis* thresholds for applicable criteria pollutants would not be exceeded nor would the projected emissions be regionally significant (i.e., greater than 10 percent of the air basin's emission budgets) as a result of implementation of the Proposed Action.

Therefore, on the basis of the foregoing, the Navy concludes that the Clean Air Act Conformity Determination requirements do not apply to the Proposed Action, resulting in this RONA.

RONA APPROVAL

Date RONA Prepared: **INSERT DATE**

Prepared By: United States Navy Base Realignment and Program Management Office, West, in consultation with the San Francisco Bay Area Water Emergency Transit Authority

Signature:

Kimberly Ostrowski, Director, BRAC PMO West