INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

for the

San Francisco Bay Area Water Emergency Transportation Authority
Central Bay Operations and Maintenance Facility

March 2011

WATER EMERGENCY TRANSPORTATION AUTHORITY

Initial Study for the

WETA
Central Bay Operations and Maintenance Facility

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Contents

List of Tables iii
List of Figures iv
List of Acronyms and Abbreviations v

Page

Chapter 1 Introduction 1-1
Purpose of this Document 1-1
Scope of this Document 1-1
Impact Terminology 1-2
Organization of this Document 1-2
Chapter 2 Project Description 2-1
Introduction 2-1
Project Setting 2-1
Project Components 2-2
Project Construction 2-5
Operation and Maintenance 2-6
Required Permits and Approvals 2-8
Public Involvement 2-9
Chapter 3 Environmental Checklist 3-1
Environmental Factors Potentially Affected 3-3
Determination 3-3
Evaluation of Environmental Impacts 3-4
I. Aesthetics 3-5
II. Agricultural and Forestry Resources 3-8
III. Air Quality 3-10
IV. Biological Resources 3-23
V. Cultural Resources 3-43
VI. Geology and Soils 3-49
VII. Greenhouse Gas Emissions 3-54
VIII. Hazards and Hazardous Materials 3-60
IX. Hydrology and Water Quality 3-69
X. Land Use and Planning 3-79
XI. Mineral Resources 3-83

XII. Noise **3-84**

XIII. Population and Housing **3-97**

XIV. Public Services **3-99**

XV. Recreation **3-100**

XVI. Transportation/Traffic **3-101**

XVII. Utilities and Service Systems **3-110**

XVIII. Mandatory Findings of Significance **3-113**

XIX. Earlier Analysis **3-117**

Chapter 4 References **4-1**

Chapter 5 List of Preparers **5-1**

Appendix A **Air Quality and Climate Change Technical Appendix**

Appendix B **Special Status Species with Potential to Occur in the Study Area**

Appendix C **Phase I Environmental Site Assessment**

Appendix D **San Francisco Bay Plan Consistency Analysis**

Tables

Page
Table 1-1. Summary of Impacts and Mitigation Measures for the Proposed Project 1-3
Table 2-1. Anticipated Permitting Requirements 2-9
Table AQ-1. Air Quality Standards Applicable in California 3-11
Table AQ-2. Air Quality Monitoring Data Measured at the Oakland International Boulevard and Berkeley Monitoring Stations 3-14
Table AQ-3. Summary of BAAQMD Thresholds 3-17
Table AQ-4. Summary of Daily Maximum Construction Emissions (pounds per day) 3-18
Table AQ-5. Summary of Mitigated Daily Maximum Construction Emissions (pounds per day) 3-20
Table AQ-6. Summary of Operational Emissions (pounds per day) 3-21
Table GHG-1. Global, National, and State GHG Emissions Inventories 3-55
Table GHG-2. Construction GHG Emissions under the Proposed Project (metric tons per year) 3-57
Table GHG-3. Summary of Operational GHG Emissions from Stationary Sources (Metric Tons per Year) 3-58
Table GHG-4. Summary of Operational GHG Emissions from Non-Stationary Sources (Metric Tons per Year) 3-58
Table GHG-5. Summary of Construction and Operational Related GHG Emissions (Metric Tons per Year) 3-59
Table N-1. Definition of Sound Measurements 3-86
Table N-2. Typical A-weighted Sound Levels 3-87
Table N-3. Vibration Source Levels for Construction Equipm 3-88
Table N-4. Human Response to Transient Vibration 3-88
Table N-5. Human Response to Continuous Vibration 3-89
Table N-6. Noise Level Standards (dBA) at single or multi-family residential, schools, churches, hospitals, and public libraries 3-89
Table N-7. Typical Construction Noise Emission Levels 3-91
Table N-8. Calculated General Construction Noise Levels 3-92
Table N-9. Calculated General Noise Levels from Pile Driving 3-93
Table N-10. Calculated General Noise Levels for Construction and Maintenance Dredging 3-94
Table N-11. Calculated Noise from Facility Operations 3-95
Table TRA-1. V/C Ratio, Delay, and Traffic Flow Conditions for LOS Designations 3-103

Figures

Follows Page

Figure 2-1 2-2
Figure 2-2 2-2
Figure 2-3a 2-2
Figure 2-3b 2-2
Figure 2-3c 2-2
Figure 2-4 2-2
Figure 2-5 2-2
Figure 3-1 3-6
Figure 3-2 3-6
Figure 3-3 3-6
Figure 3-4 3-6
Figure 3-5 3-102

Acronyms and Abbreviations

AB 32	Assembly Bill 32
ABAG	Association of Bay Area Governments
ARB	California Air Resources Board
ARRA	Alameda Reuse and Redevelopment Authority
AWR	Alameda Wildlife Refuge
BAAQMD	Bay Area Air Quality Management Agency
Basin Plan	San Francisco RWQCB Basin Plan
Bay Trail	San Francisco Bay Trail
BCDC	San Francisco Bay Conservation and Development Commission
Bgs	below the ground surface
BMPs	Best Management Practices
BRAC	Base Realignment and Closure
CAAQS	California ambient air quality standards
cal	calibrated
CAL FIRE	California Department of Forestry and Fire Protection
CalARP	California Accidental Release Program
Cal-OSHA	California Occupational Safety and Health Administration
CAT	Climate Action Team
CBC	California Building Code
CCR	California Code of Regulations
CEMP	Comprehensive Emergency Management Plan
CEQ	Council on Environmental Quality
CGS	California Geological Survey
CH4	methane
CHRIS	California Historical Resources Information system
CHSC	California Health and Safety Code
CMA	Alameda County Congestion Management Agency
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
cy	cubic yard/yards

dB	decibel
dBA	A-weighted decibel
DMMO	Dredged Materials Management Office
DPM	diesel particulate matter
DTSC	California Department of Toxic Substance Control
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
EBS	Environmental Baseline Survey
EDR	Environmental Data Resources, Inc.
EFS	Essential Facilities Standards
EIR	Environmental Impact Report
EOC	Emergency Operations Center
ESA	Environmental Site Assessment
Fed-OSHA	Federal Occupational Safety and Health Administration
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FTA	Federal Transit Authority
GHGs	greenhouse gases
HCPs	Habitat Conservation Plans
HDPE	high density polyethylene
HFCs	hydroflourocarbons
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Maintenance Plan
HRA	Historical Radiological Assessment
HWCA	Hazardous Waste Control Act
IOP	Implementation and Operations Plan
IPCC	Intergovernmental Panel on Climate Change
IR	Installation Restoration
JPA	Joint Powers Agreement
Ldn	day-night sound level
LEED	Leadership in Energy and Environmental Design
Leq	equivalent sound level
Lmin and Lmax	minimum and maximum sound levels
LTMS	Long Term Management Strategy
LOS	Level of service
Lxx	percentile-exceeded sound levels
Mcy	million cubic yards
MND	Mitigated Negative Declaration
MLD	Most Likely Descendant
MLLW	mean lower low level
msl	mean sea level

MTS	Metropolitan Transportation System
N2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NCCPs	Natural Community Conservation Plans
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NO2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Corporation Environmental Services
NWIC	Northwest Information Center
O3	ozone
OCC	Operations Control Center
OPA	Oil Pollution Act
OU	Operable Units
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
Peak Velocity or PPV	Peak Particle Velocity
PEP	Parcel Evaluation Plan
PFCs	perfluorocarbons
PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
RCRA	Resource Conservation and Recovery Act
RHND	Regional Housing Needs Determination
RMP	Risk Management Plan
RMS	root-mean-square quantity
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SEL	sound exposure level
SF	square feet
SF6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SF-DODS	San Francisco Deep-Ocean Disposal site
SO2	sulfur dioxide
SPL	sound pressure level
SPCC	Spill Prevention, Control and Countermeasures
SWPPP	Stormwater Pollution Prevention Plan
TCMP	Traffic Capacity Management Procedure
TDS	total dissolved solids

TSM/TDM	Transportation Systems Management/Transportation Demand Management
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
UHMW	ultra high molecular weight
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
V/C	volume to capacity
VHFHSZ	Very High Fire Hazard Severity Zone
WETA	San Francisco Bay Area Water Emergency Transportation Authority
WGCEP	Working Group on California Earthquake Probabilities
WWTP	Main EBMUD Wastewater Treatment Plant

Chapter 1
Introduction

Purpose of this Document

This Initial Study (IS) is a public document that assesses the environmental effects of the San Francisco Bay Area Water Emergency Transportation Authority's (WETA) Central Bay Operations and Maintenance Facility (proposed project), as required by the California Environmental Quality Act (CEQA) and in compliance with State CEQA Guidelines (14 Cal. Adm. Code 1400 et seq.). It serves as an environmental document to be used in the local planning and decision-making process, and does not recommend approval or denial of the project. As the CEQA lead agency for the project, the WETA will consider whether to adopt the related Mitigated Negative Declaration (MND) and whether to approve the project.

Scope of this Document

Consistent with CEQA requirements, the IS evaluates the potential impacts of the proposed project in relation to the following:

- Aesthetics.
- Agricultural and forestry resources.
- Air quality.
- Biological resources.
- Cultural resources.
- Geology and soils.
- Greenhouse gas emissions.
- Hazards and hazardous materials.
- Hydrology and water quality.
- Land use and planning.
- Mineral resources.
- Noise.
- Population and housing.
- Public services.
- Recreation.
- Transportation/traffic.
- Utilities and service systems.

Impact Terminology

The following terminology is used in this document to describe the levels of significance of impacts that would result from the project.

- The project is considered to have *no impact* if the analysis concludes that the project would not affect a particular resource topic.
- An impact is considered *less than significant* if the analysis concludes that the project would cause no substantial adverse change to the environment and that impacts would not require mitigation.
- An impact is considered *less than significant with mitigation* if the analysis concludes that the proposed project would cause no substantial adverse change to the environment with the inclusion of mitigation measures to which the applicant has agreed.
- An impact is considered *significant* if the analysis concludes that the proposed project would cause a substantial adverse change to the environment that could not be mitigated by the inclusion of mitigation measures to which the applicant has agreed.

Organization of this Document

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- Chapter 1, *Introduction*, identifies the purpose, scope, and terminology of the document.
- Chapter 2, *Project Description*, identifies the location, background, and planning objectives of the project; describes the project in detail; identifies the permits and approvals required for the project; and identifies public involvement procedures.
- Chapter 3, *Environmental Checklist*, presents the checklist responses for each resource topic. This section identifies the environmental setting, project impacts on each resource and provides a brief explanation for the determination of project impacts. It also identifies mitigation measures to which the applicant has agreed.
- Chapter 4, *References Cited*, identifies all printed references and personal communications cited in this report.
- Chapter 5, *List of Preparers*, identifies the individuals involved in preparing this document and their areas of technical specialty.

Summary of Environmental Impacts

A summary of the proposed project's potential impacts and associated mitigation measures are summarized in Table 1.1.

Table 1-1. Summary of Impacts and Mitigation Measures for the Proposed Project

Resource Section	Impact	Mitigation Measure
I. Aesthetics		
	Impact AES-1: Project could result in impact to area lighting	**Mitigation Measure AES-1: Apply Minimum Lighting Standards** The project proponent will ensure that the following measures are incorporated into the design and construction of all project elements. • Nighttime lighting will be used only where it is required for security or safety. • If nighttime lighting is required, it will be focused onsite and will be directed downward; fixtures that project upward or horizontally will not be used. • Any project lighting will include glare-minimizing fixtures, and the height of poles or mountings will be reduced to limit the potential for backscatter into the nighttime sky and incidental spillover of light. • The design of exterior light fixtures will incorporate shielding to prevent fugitive glare. • Luminaire mounts will have nonglare finishes. • Luminaire lamps will provide good color rendering and natural light qualities. Low- and high-pressure sodium fixtures that are not color-corrected will not be used. Luminaire intensity will be the minimum necessary for safety. • Lighting will be equipped with time-clock switches to ensure that illumination is restricted to nighttime hours.
II. Agricultural and Forestry Resources		
	No impact	None applicable
III. Air Quality		
	Impact AQ-1: Project could result in the creation of construction-related fugitive dust	**Mitigation Measure AQ-1: Implement BAAQMD Basic Control Measures to Control Construction-Related Fugitive Dust**

Resource Section	Impact	Mitigation Measure
		The project applicant will implement the following BAAQMD-recommended basic control measures to reduce particulate matter emissions from onshore construction activities. • All unpaved exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site will be covered. • All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used. • Post a publicly visible sign with the telephone number and contact person at the Lead Agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District's phone number will also be visible to ensure compliance with applicable regulations.
	Impact AQ-2: Project related NO_x emissions could impact air quality	**Mitigation Measure AQ-2: Implement BAAQMD Basic Control Measures to Control Construction-Related NOX Emissions** The project applicant will implement the following BAAQMD-recommended basic control measures to reduce NO_X emissions from construction equipment. • Idling times will be minimized by shutting off equipment when it is not in use or by reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage will be provided for construction workers at all access points. • All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Resource Section	Impact	Mitigation Measure
	Impact AQ-3: Project related NO_x emissions could impact air quality	**Mitigation Measure AQ-3: Modify the Construction Schedule to Ensure Daily NO_X Emissions Do Not Exceed 54 Pounds** The project applicant will implement the construction schedule outlined in Appendix A to ensure daily NO_X emissions do not exceed 54 pounds per day. Any proposed deviation from the construction schedule outlined in Appendix A shall be reviewed by WETA prior to implementation to ensure phasing and use of in-water and on-shore equipment will not result in significant NO_X emissions.
IV. Biological Resources		
Construction		
	Impact BIO-1: Project could impact marine mammals during dredging and pile driving activities	**Mitigation Measure BIO-1: Minimize Harassment to Marine Mammals during Dredging and Pile Driving Activities** • During the project permitting phase, NMFS will be consulted to determine if an Incidental Harassment Authorization would be needed for dredging or pile driving activities. • Work would occur only during daylight hours (7 a.m. to 7 p.m.) so that marine mammals are visible at all times during dredging and pile driving activities. • A qualified biological monitor would visually survey the area 1 day prior to the start of dredging or pile driving activities to establish a baseline. • A safe zone would be enforced during dredging and pile driving operations. A marine mammal monitor would survey the area prior to the startup of dredging or pile driving equipment. • Installation would not begin until no marine mammals are sighted within a designated “safe zone” for at least 15 minutes prior to the initiation of the activity. • For dredging or pile driving activities, the proposed safety zone would be a radius of 1,000 feet from the dredging or pile driving location or distance at which the noise would be below 180 dB. • Once activities begin, work would continue until completed. Between pile driving of different piles, the monitor would again confirm that the safety zone is clear of marine mammals.

Resource Section	Impact	Mitigation Measure
		• The construction contractor would establish daily "soft-start" or "ramp-up" procedures for pile-driving activities. This technique would be used at the beginning of each piling installation to allow any marine mammal that may be in the area to leave before pile driving activities reach full energy. The contractor would provide an initial three strikes at reduced energy (40%), followed by a 1-minute waiting period, then subsequent 3-strike sets.
	Impact BIO-2: Project could impact seal haul-outs and bird nesting and roosting	**Mitigation Measure BIO-2: Use Recommended Access Channel and Boat Speeds from the Draft Alameda National Wildlife Refuge Comprehensive Conservation Plan to avoid Disruption to Seal Haul-Outs and Bird Nesting and Roosting.** The draft Conservation Plan for the Alameda National Wildlife Refuge includes a recommended 500-foot access corridor for all vessel traffic and a maximum 5 mile per hour speed limit to keep vessels well away from the shoreline of the main portion of the Refuge as well as from Breakwater Island, in order to protect bird species and marine mammals from disruption. All construction and maintenance vessels and all ferry boats shall utilize this access corridor and shall, under all non-emergency situations, not approach any closer than 750 feet to the shorelines of the proposed Refuge and Breakwater Island.
	Impact BIO-3: Project could impact special status and common fish species during in-water work	**Mitigation Measure BIO-3: Coordinate with Appropriate Federal and State Agencies to Reduce Impact on Special-Status and Common Fish Species during In-Water Work** WETA will consult with NMFS and DFG to implement measures to reduce impacts associated with in-water work activities to special-status fish species. These measures could include but are not limited to the following: • In-water work activities will occur outside the peak juvenile outmigration periods for special-status fish species whenever possible. June 1 to November 30 (the dredging window in the Central Bay) would avoid high migratory periods. • Using bubble curtains to attenuate pile driving sounds. • A vibratory hammer will be used when feasible.

Resource Section	Impact	Mitigation Measure
		• Monitoring sound attenuation. As a performance standard, the selected measures will represent the best available technology that is economically achievable, and will achieve maximum feasible reduction in underwater sound pressure levels (SPLs) and/or related impacts on special-status fish species.
	Impact BIO-4: Project could impact nesting migratory birds and raptors	**Mitigation Measure BIO-4: Avoid and Minimize Impacts on Nesting Migratory Birds Including Raptors** • Preconstruction bird surveys will be conducted by a qualified biologist no more than 1 week prior to the start of construction for activities occurring during the breeding season (February 1 to August 31). • If active raptor nests are found within 500 feet of where work is to occur, or active passerine nests are found within 100 feet of where work is to occur, a non-disturbance buffer will be established at a distance sufficient to minimize nest/roost disturbance based on the nest location, topography, cover, species' sensitivity to disturbance, and the intensity/type of potential disturbance. The buffer size would be determined in cooperation with the CDFG and the USFWS. • If rescheduling of work around active nests/roosts is infeasible, a qualified biologist will monitor nests for signs of disturbance. If it is determined that project activities are resulting in nest/roost disturbance, work will cease immediately and the CDFG and the USFWS will be contacted.
	Impact BIO-5: Project could impact native oyster population	**Mitigation Measure BIO-5: Survey for Native Oysters and Relocate (if necessary)** WETA will conduct a pre-construction diving survey to determine if native oysters are present in the study area. If found within or immediately adjacent to the construction footprint, WETA would request guidance from NMFS (or other applicable agency) as to the need and or feasibility to move affected beds.

Resource Section	Impact	Mitigation Measure
V. Cultural Resources		
	Impact CR-1: Project could result in impacts to an unknown pre-historic and historic-era archaeological resources	**Mitigation Measure CR-1: Procedures for Unanticipated Discoveries** Per Section 106 of the NHPA, if artifacts are discovered during excavation activities, WETA shall obtain the review and recommendation of a qualified archaeologist. Recommendations may include evaluation, preservation in place, archaeological test excavation and/or archaeological data recovery, and a draft and final report documenting such activities.
	Impact CR-2: Project construction could potentially disturb buried human remains	**Mitigation Measure CR-2: Comply with State Laws Relating to Disposition of Human Remains** The treatment of human remains discovered during excavation activities shall comply with applicable state laws. In the event that human remains are discovered, the County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall be responsible for notifying the NAHC, who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec.5097.98). The archaeological consultant, WETA, and MLD shall make all reasonable efforts to develop an agreement for the dignified treatment of human remains (State CEQA Guidelines. Sec. 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains.
VI. Geology and Soils		
	Impact GEO-1: Project construction could result in impacts to paleontological resources	**Mitigation Measure GEO-1: Stop Work If Buried Paleontological Resources Are Discovered** If paleontological resources are encountered during project construction, excavation within 50 feet of the suspected resource(s) will be immediately suspended, the City of Alameda (City) will be immediately notified, and a qualified paleontologist will be retained to determine the significance of the find using the criteria set forth in State CEQA Guidelines Section 15064.5. If the find is determined to be significant, the City and project proponent, in consultation with the qualified paleontologist, will seek to avoid damaging effects on the resource whenever feasible. If avoidance is not feasible, the

Resource Section	Impact	Mitigation Measure
		qualified paleontologist will prepare a salvage plan for mitigating the effect of the project on the qualities that make the resource unique. The qualified paleontologist shall complete the plan in accordance with the State CEQA Guidelines and submit it to the City for review and approval.
VII. Greenhouse Gas Emissions		
Construction		
	Impact GHG-1: Project could have impact on Green House Gas emissions	**Mitigation Measure GHG-1: Implement the BAAQMD's Best Management Practices for GHG Emissions (Optional)** The project applicant will implement, to the extent feasible, the following BMPs mentioned in the BAAQMD CEQA Guidelines: • Use alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15% of the construction fleet. • Use local building materials of at least 10%. • Recycle at least 50% of construction waste or demolition materials.
VIII. Hazards and Hazardous Materials		
	Impact HAZ-1: Construction of the proposed project could create the potential for upset and accident conditions involving the release of hazardous materials into the environment	**Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Spill Prevention Control and Countermeasure Plan during Construction** As part of compliance with the NPDES General Construction Permit, a Hazardous Material Spill Prevention Control and Countermeasure Plan will be prepared for the use of construction equipment for the proposed Project and will minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the Project. This plan will describe storage procedures and construction site housekeeping practices and identify the parties responsible for monitoring and spill response. The measures and monitoring procedures required under the General Construction Permit will minimize the potential for the release of hazardous materials to the environment. WETA will review and approve the Hazardous Materials Spill Prevention Control and Countermeasure Plan before allowing construction to begin. WETA will routinely inspect active portions of the project area to verify that the BMPs specified in the plan are properly implemented and maintained, and will immediately notify the contractor if there is a noncompliance issue that will require compliance.

Resource Section	Impact	Mitigation Measure
		The federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110) is any oil spill that: (1) violates applicable water quality standards; (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline; or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines. If a spill is reportable, the contractor's superintendent will immediately notify the Alameda County Department of Environmental Health and the DTSC, which have spill response and cleanup ordinances to govern emergency spill response. A written description of reportable releases will be submitted to the San Francisco Regional Water Quality Control Board (RWQCB). This submittal will include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form. If a reportable spill has occurred, and results determine that project activities have adversely affected surface or groundwater quality in excess of water quality standards, a detailed analysis shall be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to ASTM standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, WETA and its contractors will select and implement measures to control contamination, with a performance standard that water quality will be returned to baseline conditions. These measures will be subject to approval by the Alameda County Department of Environmental Health and DTSC.
IX. Hydrology and Water Quality		
	Impact HYD-1: Project fuel storage, marine refueling activities, and stormwater runoff could result in impacts to water quality	**Mitigation Measure HYD-1: Preparation and Implementation of Project SWPPP** The project construction contractor will prepare and implement a SWPPP to protect water quality during construction. The San Francisco Bay RWQCB, the primary agency responsible for protecting water quality within the

Resource Section	Impact	Mitigation Measure
		project area, is responsible for reviewing and ensuring compliance with the SWPPP. The SWPPP will include a description of BMPs to be applied to minimize the discharge of pollutants from the site during construction. These construction BMPs will include, but will not be limited to, the following: • Train construction personnel in proper material delivery, handling, storage, cleanup, and disposal procedures. • Develop spill response and containment procedures for construction. • Identify all storm drains and catch basins near the construction site and ensure all workers are aware of their locations to prevent pollutants from entering. • Protect all storm drains and catch basin inlets. • Develop an erosion control and sediment control plan for wind and rain. • Refuel vehicles and equipment away from San Francisco Bay to prevent runoff and to contain spills. • Minimize the potential for contamination of San Francisco Bay by maintaining spill containment and clean up equipment onsite, and by properly labeling and disposing of hazardous waste. • Inspect site regularly to ensure that all BMPs are intact and maintain as needed. • Conduct daily site cleanings as needed. • Maintain written records of inspections, spills, BMP-related maintenance activities, corrective actions, and visual observations of offsite discharge of sediment or other pollutants, as required by the RWQCB.
	Impact HYD-2: Project could result in impact on turbidity	**Mitigation Measure HYD-2: Monitor for Turbidity during Dredging Activities** The San Francisco RWQCB makes certain exceptions for dredging activities, and the typical Basin Plan standards for turbidity may not apply in the mixing zone of the dredging activities. However, outside of the mixing zone, which could be more than 500 feet, WETA or its contractor would need to monitor and ensure Basin Plan standards for turbidity are met. Basin Plan standards

Resource Section	Impact	Mitigation Measure
		are as follows: • Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU. • Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%. • Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs. • Where natural turbidity is greater than 100 NTUs, increases shall not exceed 1%. The specific monitoring schedule including any additional timing information and quality assurance shall be determined by WETA in collaboration with the San Francisco RWQCB.
	Impact HYD-3: Project could result in impacts to stormwater	**Mitigation Measure HYD-3: Implement RWQCB Provision C.3 for Control of Stormwater and BMPs for Operational Protection of Water Quality** Under Provision C.3, WETA will develop a compliance plan to ensure runoff is adequately collected and treated prior to discharge, and that peak flows and flow durations match pre-project conditions. BMPs included in the compliance plan may require operational maintenance such as cleaning and sweeping to ensure that the fuel storage vaults and fueling areas are kept clean and stormwater runoff does not collect contaminants such as urea and diesel stored at the site. The final compliance plan shall be approved by the San Francisco RWQCB.
	Impact HYD-4: Project facility could be subject to tidal flooding	**Mitigation Measure HYD-4: Provide Tidal Flood Wall (or other Improvements) to Address Tidal Flooding After 2050** If the facility is still in operation after 2050, it may be subject to tidal flooding during extreme tide events. As necessary to address potential flooding after 2050, WETA shall install a flood wall or earthen berm to protect land-side facilities (including the outdoor fuel storage tanks) that provides sufficient freeboard to protect the facility from the damage in the event of a 100-year high tide. Based on current estimates, this improvement is not estimated to be required until sometime after 2050.

Resource Section	Impact	Mitigation Measure
X. Land Use and Planning		
	No impact	Not applicable
XII. Noise		
	Impact N-1: Maintenance dredging could exceed City of Alameda noise standards	**Mitigation Measures N-1: Limit When Maintenance Dredging Occurs** WETA will limit maintenance dredging to the hours between 7 a.m. and 7 p.m. on weekdays and 8 a.m. to 5 p.m. on Saturdays per the City of Alameda Municipal Code, Chapter 4.10.
XIII. Population and Housing		
	No impact	Not applicable
XIV. Public Services		
	No impact	Not applicable
XV. Recreation		
	No impact	Not applicable
XVI. Transportation/Traffic		
	Impact TRA-1: Project construction could impact area traffic	**Mitigation Measure TRA-1: Develop and Implement a Traffic Control Plan** The construction contractor will mitigate the proposed project's construction-related traffic impacts by developing and implementing a Traffic Control Plan as part of the overall Construction Management Plan, in accordance with City of Alameda policies. The Traffic Control Plan will be implemented throughout the course of project construction, and will include the following elements: • Communication plan to notify transit providers, emergency service providers, residences, and businesses located in the project vicinity of the construction plans. • Identify roadway segments or intersections that are at, or approaching, LOS that exceeds local standards, and provide for

Resource Section	Impact	Mitigation Measure
		construction-generated traffic to avoid these locations at the peak periods, either by traveling different routes or by traveling at non-peak times of day. • Restrict delivery of construction materials to between the hours of 8 a.m. and 3 p.m. to avoid more congested morning and evening hours. • Require that written notification be provided to contractors regarding appropriate routes to and from the construction site, and the weight and speed limits on local roads used to access the construction site. • Provide for adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. • Specify that a sign be posted at all active construction areas giving the name and telephone number or e-mail address of the City of Alameda staff person designated to receive complaints regarding construction traffic.
XVII. Utilities and Service Systems		
	No impact	Not applicable
XVIII. Mandatory Findings of Significance		
	No impact	Not applicable

Chapter 2
Project Description

Introduction

WETA proposes to construct a Central Bay Operations and Maintenance Facility (proposed project) to serve as the central San Francisco Bay base for WETA's ferry fleet, Operations Control Center (OCC), and Emergency Operations Center (EOC). The proposed project would provide maintenance services such as fueling, engine oil changes, concession supply, and light repair work for WETA ferry boats operating in the central San Francisco Bay. In addition, the proposed project would be the location for operational activities of WETA, including day-to-day management and oversight of services, crew, and facilities. In the event of a regional disaster, the facility would also function as an emergency operations center, serving passengers and sustaining water transit service for emergency response and recovery.

Project Setting

The project site is located southeast of the intersection of West Hornet Avenue and Ferry Point Road near Pier 3 in the City of Alameda (Figure 2-1). The project site is within the Alameda Naval Air Station (NAS) Base Realignment and Closure (BRAC) area, now known as Alameda Point. The former Alameda NAS, which was closed in 1997, occupied roughly 1,700 acres of land and roughly 1,000 acres of water. The project site is owned by the City of Alameda and was leased to the United States Navy as part of the NAS.

The proposed project site includes approximately 15,500 square feet (0.36 acre) of landside space and approximately one acre of waterside space in San Francisco Bay. The project site is designated as Mixed Use Planned Development District (MX) and is zoned General Industrial District (M-2) by the City of Alameda.

A small-boat floating marina with a landside building for maintenance and a snack-bar was constructed on the site by the Navy in the mid-1950s. The facility was used to house and maintain small recreational boats for base residents. It was in operation until the base was closed and the small building was demolished a few years later. Portions of the marina are still in place.

The landside portion of the project site is nearly flat, asphalt-paved, and crossed by a non-functioning railroad spur line. Elevation is approximately 6 to 10 feet above mean sea level (msl). The project site is bounded on the east by the San Francisco Bay Trail (Bay Trail) and an undeveloped park, and on the north by a paved open area and West Hornet Avenue (presently not a public right of way), which is defined by curbs and pavement stripes. Pier 3 lies to the west of the site along with the USS Hornet, a functioning museum and designated national historic landmark. The U.S Department of Transportation Maritime Administration (MARAD) leases the property west and north of the site, including a landside building and several piers from the Alameda Reuse and Redevelopment Authority (ARRA). A concrete seawall delineates the southern edge of the landside portion; the seawall is tilted and cracked, and riprap and broken concrete span the area between the seawall and the water.

The overwater coverage of the existing structures at the site is approximately 20,220 square feet. There are approximately 35 existing concrete piles in the water surrounded by debris and the deteriorated remains of the earlier floating marina mentioned above, all of which would be removed for the proposed construction.

Project Components

The proposed facilities, including construction limits are presented in Figure 2-2. Refer to Figures 2-3a through 2-3c for the layout and design of the proposed project. Figure 2-4 provides a conceptual rendering of the proposed project. The following sections provide a more detailed description of the proposed landside and waterside structures, and construction activities associated with the proposed project.

Landside Facility

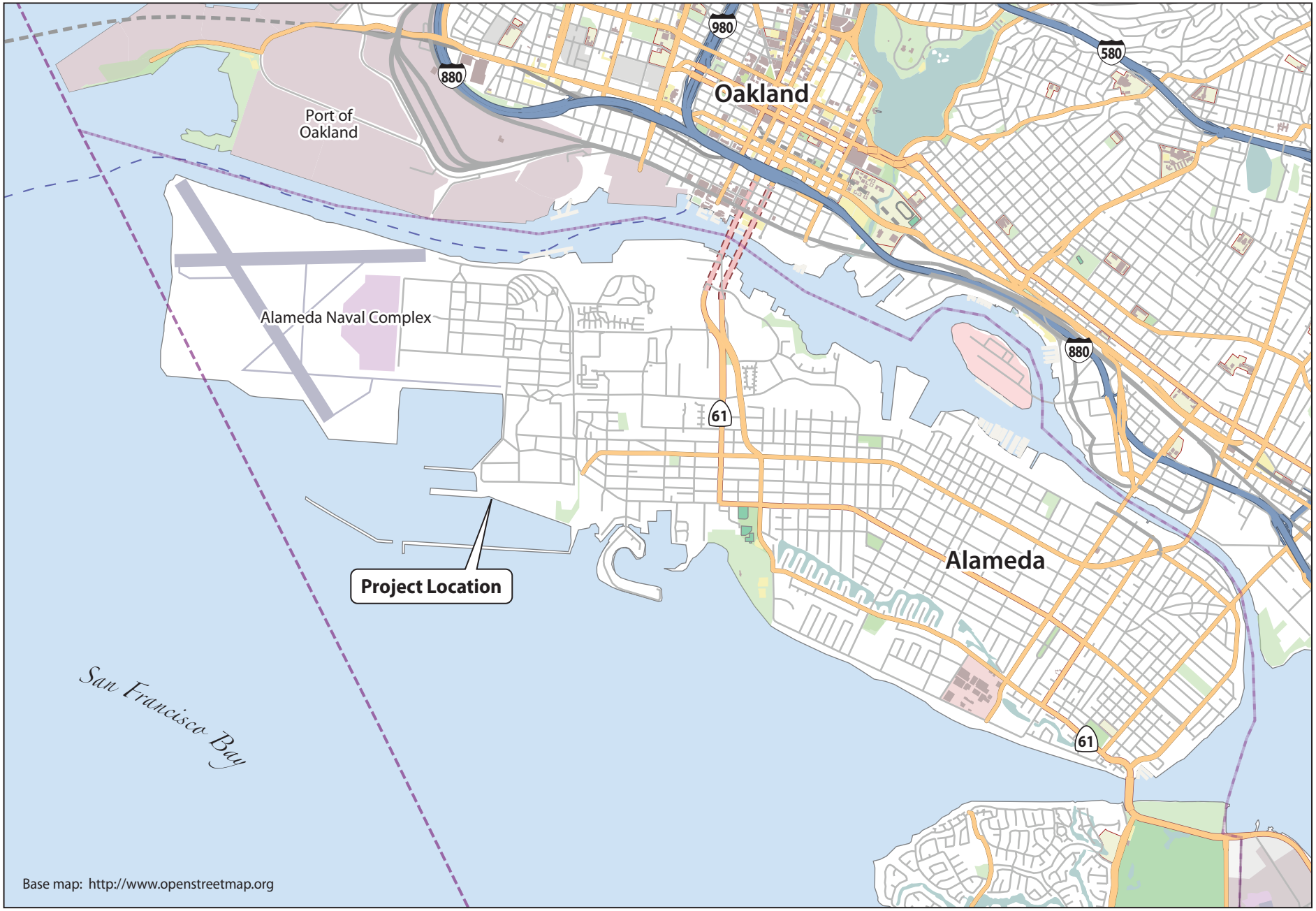
The proposed landside building would be a four-story, approximately 25,000-square-foot structure designed to Essential Facilities Standards[1] (EFS) in accordance with the California Building Code (CBC). The landside building dimensions would be approximately 35 feet by 165 feet and would be about 75 feet tall (refer to Figure 2-5). The building would provide maintenance functions and storage for vessel spare parts, office and meeting space for WETA's OCC, EOC, crew facilities, and concession support. Figure 2-3b presents the layout of the landside maintenance and operations facility.

WETA is exploring the use of sustainable building features such as energy-efficient lighting, bicycle parking, water-efficient plumbing and irrigation, a "green roof" for stormwater management, photovoltaics to generate solar energy, and the use of recycled and local materials. At a minimum, WETA will obtain Leadership in Energy and Environmental Design (LEED) certification at the minimum of Silver level. Gold or Platinum certification could be sought if further analysis proves these higher LEED certification levels feasible and economically viable for the project.

An existing unimproved (on street) portion of the Bay Trail runs along the undeveloped park east of the project site and stops at West Hornet Avenue; the designated off-street portion of the Bay Trail connects directly north of the project site on Main Street (San Francisco Bay Trail 2010). In consultation with the San Francisco Bay Conservation and Development Commission (BCDC) and the City of Alameda, the project proposes to implement one, or a combination thereof, of the following three Bay Trail access improvement options to improve public access and recreational opportunities in and around Alameda Point:

1. Contribute funding to provide signage, striping, and plastic bollards to connect the existing Bay Trail to an interim trail around the secure MARAD facilities.
2. Establish a new Bay Trail overlook area that would include benches, a decorative fence, and landscaping at the southeast portion of the existing park.
3. Widen sidewalks on West Hornet Avenue (with landscaping) and provide an additional bike lane leading towards the current location of the USS Hornet.

[1] The Uniform Building Code outlines specific building standards for facilities that provide emergency response services and must remain operational after a fire, flood, earthquake, hurricane or other disaster.



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ICF INTERNATIONAL

Figure 2-1
Project Location

Source: KPFF, 2010.
Aerial image: Google Inc. 2009. Google Earth Pro, Version 5.2. Mountain View, CA. Accessed: September 24, 2010.

0 100 200 300 400
Feet

N

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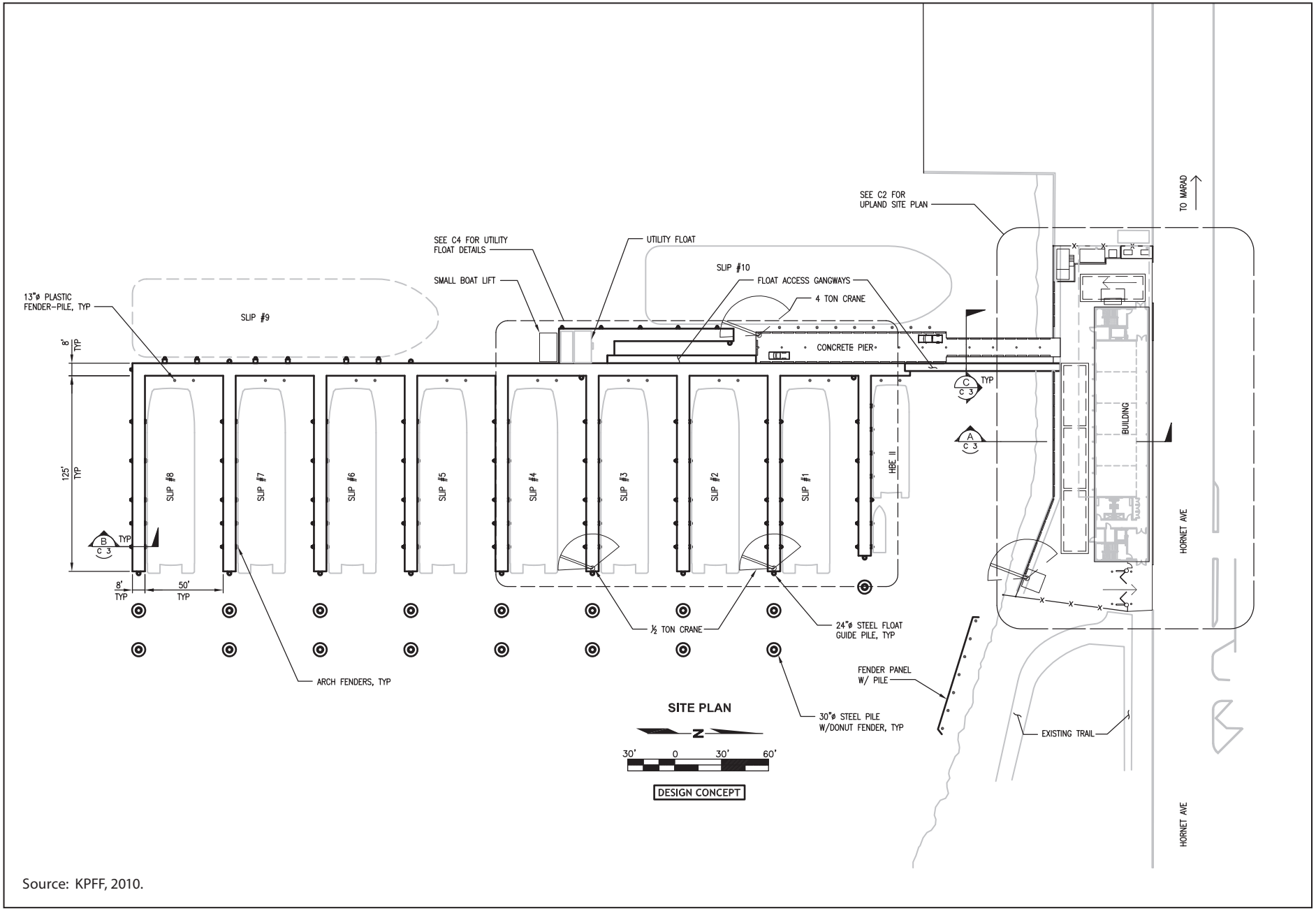
ICF INTERNATIONAL

Figure 2-2
Project Site



Source: KPFF, 2010.

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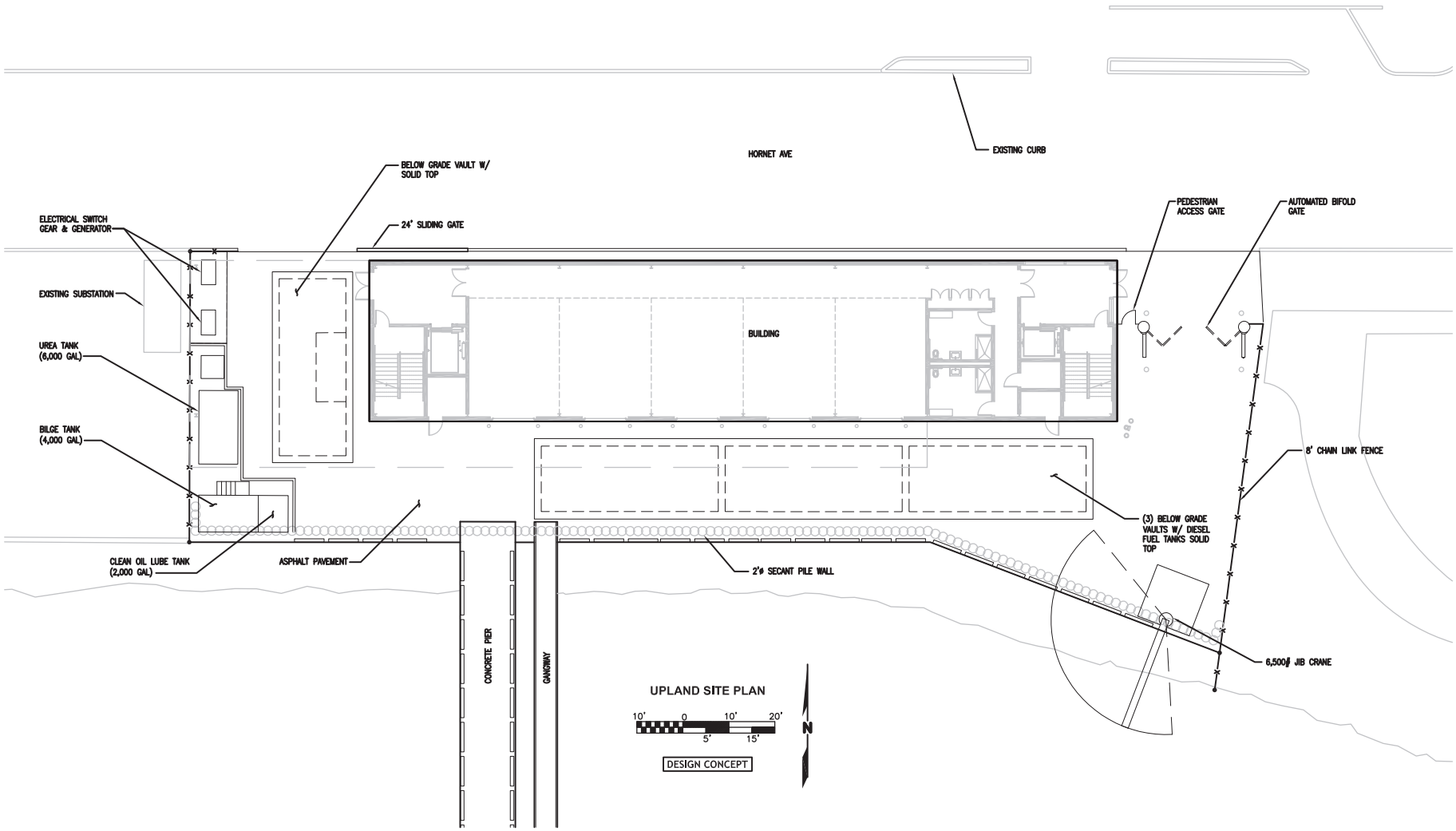
Figure 2-3a
Site Plan



Source: KPFF, 2010.

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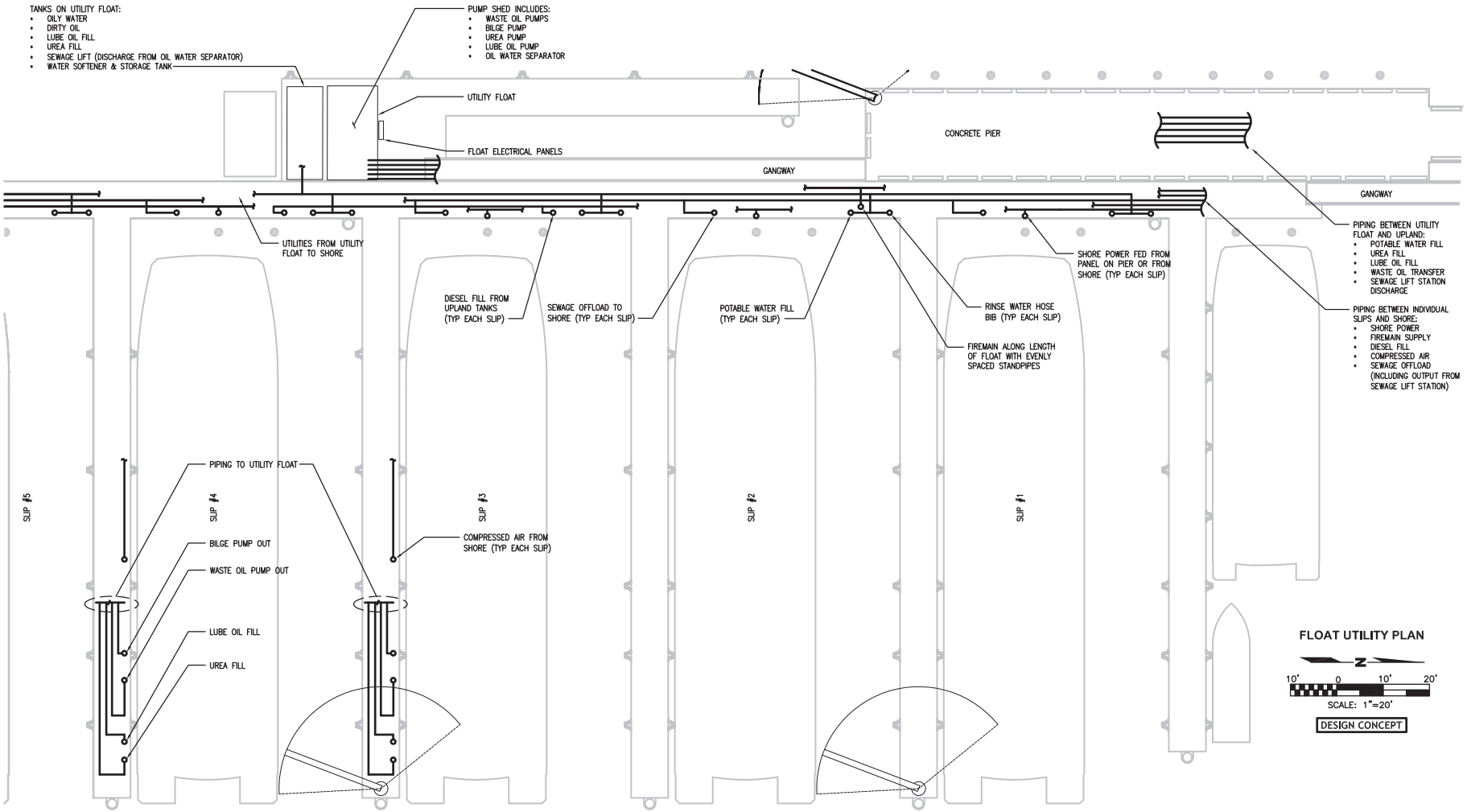
Figure 2-3b
Upland Site Plan



Source: KPFF, 2010.

Graphics ... 00789.08 (8-10)

ICF INTERNATIONAL

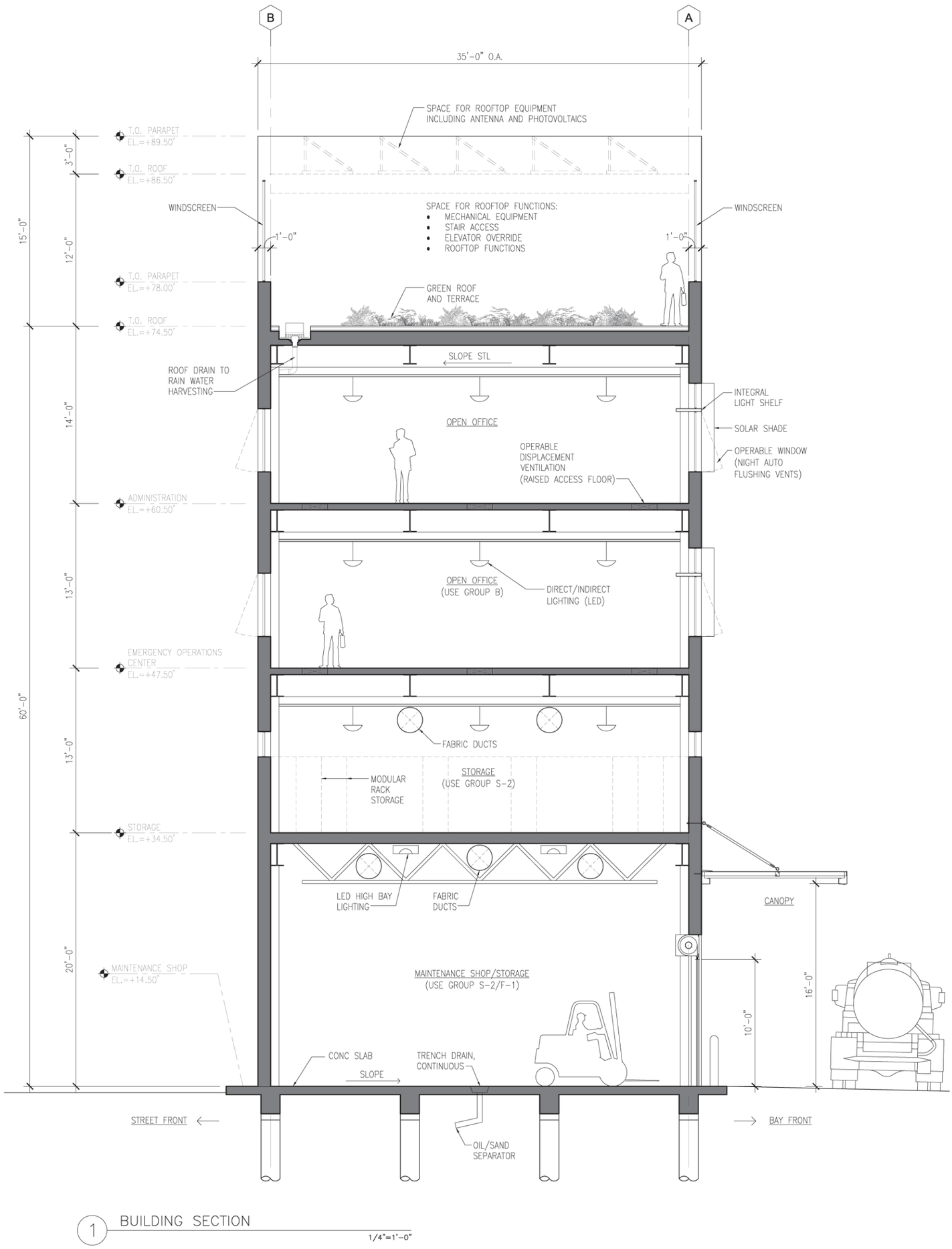
Figure 2-3c
Float Utility Plan

Sources: KPFF Consulting Engineers and ROMA Design Group, Oct. 2010.

Graphics ... 00789.08 (3-8-11)

ICF INTERNATIONAL

Figure 2-4
WETA Alameda Maintenance Facility Rendering



Source: KPFF Consulting Engineers; ROMA Architecure and Urban Design.

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Figure 2.5
Building Cross Section

Marine Facility

The proposed marine facility would have an overwater coverage of approximately 20,000 square feet (0.46 acre) and would provide berthing slips for up to 11 vessels, with limited berthing capacity for vessels in transit. The marine facility would include a fixed pier capable of servicing vessels (slip 10 in Figure 2-3a). The pier would be fitted with a crane capable of removing and replacing vessel engines. All the berthing slips would be supplied by fresh water, wash water, sanitary sewer, electricity, diesel fuel, fluids, waste pump-out, and fire suppression, in addition to supporting the loading and off-loading of supplies, sundries, and waste. Although no regular passenger loading is anticipated at this site, berths would be capable of loading and unloading passengers in the event of an emergency. The marine facility would also provide diver platforms for underwater inspections and an on-shore davit[2] with a 6,500-pound capacity. The davit hoist would require a 5- to 10-horsepower electric motor and would be intended for transfer of equipment between shore and water, movement of spill response equipment, and transfer of small boats to the water in an emergency.

The vessel types held at the facility would include small crew boats, and ferries with propeller propulsion and 1,000- to 1,750-gallon fuel tanks on each side. The facility would typically operate from 5 a.m. to 11 p.m., with 80% utilization (i.e., 80% of the time, the vessels would be moored for servicing and layover).

Berthing Floats

The berthing facility would include a system of ramps and platforms to facilitate access between the gangway and the vessel doors and to allow access to the floating dock for line handling and servicing the vessel. The facility-wide deck elevation would be at a level that would allow direct access to the optimum number for boats serviced at the facility. To accommodate other boats that do not align with the deck elevation, adjustable portable platforms would be provided to allow access between shore and boat, and would be suitable for relocation as needed.

The berthing floats would consist of compartmented concrete pontoons of approximately 125 feet by 8 feet. The float length was determined to be the minimum necessary for access to both the forward and aft loading doors, and for efficient service of the vessels. The berthing floats would include vertical strake[3] fenders and appropriate mooring fittings for safe docking and holding of the vessels. The floats would be outfitted with fire protection and life safety devices as required by the City of Alameda.

All floats would have approximately 2 feet of freeboard and an elevated steel walkway at approximately 7 feet above waterline with a utility chase below the walkway. The head walk and finger floats would be approximately 8 feet wide. All systems would be modular and compatible with other WETA facilities (i.e., finger float connections, utility layout, material, sizes, etc.).

Gangways

The gangways connecting the fixed pier and shore to the berthing floats would be aluminum structures approximately 90 feet long by 8 feet wide, with a nonskid walking surface. Each gangway

[2] A davit is a crane-like device used to suspend or lower equipment (e.g., workboats).

[3] A strake is a single continuous line of planking or metal plating extending on a vessel's hull from stem to stern.

would have a maximum one vertical to eight horizontal (1V: 8H) slope over the majority of the tidal range in order to satisfy American Disability Act (ADA) rules for gangways.

The pier apron would be supported on driven steel piles. The apron deck and substructure would be a combination of cast-in-place and precast concrete. Each gangway landing would be supported at the shoreline on pile. The gangway and the apron would be protected from accidental ferry impact by steel fender pile with protective wrapping (high density polyethylene [HDPE] or ultra high molecular weight [UHMW]) or plastic pipe pile approximately 18–30 inches in diameter

Fueling Facility

The fuel storage facility would be contained below grade in vaults, approximately 5–18 feet from the shoreline. The facility would consist of up to four vaulted underground storage tanks (12,000 gallon tanks) with a combined capacity of up to 48,000 gallons. Multiple vaults and tanks are used to provide system redundancy and layout efficiency. The fuel tanks would be National Fire Protection Association (NFPA) approved and installed in buried concrete vaults that would be equipped with vapor and liquid detection systems as well as a fire suppression system. Systems would be provided to recover liquid from the vault.

Utilities

Water, sanitary sewer, and electrical public utility connections are available on West Hornet Avenue adjacent to the project site. Buried utility lines would pass underground through the site and would be suspended beneath the fixed concrete pier. Berthing floats would connect with shoreside utilities by flexible lines attached to the gangway. A pump on the float system would discharge sanitary sewer effluent from the floating system into the landside system.

Stormwater Drainage

An existing 12-inch concrete storm drain line crosses the east end of the site (running north to south) with an outfall in the rock slope at the south side of the site. This pipe collects stormwater from areas north of the site. A system of new onsite catch basins and pipes would collect site runoff and be connected to the existing 12-inch storm drain line. Site runoff would be treated by oil-water separators and treatment vaults (if needed) in accordance with applicable stormwater regulations before discharge from the site.

Site Access

WETA access to the project site would be provided by West Hornet Avenue. MARAD's long-term lease with ARRA indicates that MARAD has the option to build a warehouse on or adjacent to the Pier 3 property. Doing so could restrict access to the proposed project by eliminating the majority of West Hornet Avenue on the northern boundary of the site. However, the City of Alameda has indicated that it would obtain modifications to MARAD's fence lines and boundaries to allow WETA access to West Hornet Avenue along the full length of the northern boundary. Public access would be restricted; the site would be fully fenced (an 10-foot-tall chain link fence topped with two-strand barbed wire) with exception of a concrete wall on the west side of the site. The proposed fencing/concrete wall would be in compliance with U.S. Coast Guard (per the Vessel Security Plan required by Marine Transportation Security Act of 2002; 33 CFR 104) and WETA requirements. The

Vessel Security Plan requires security measures for employee access and for delivery of vessel stores and bunkers for facilities with boats certified for more than 150 passengers.

During both construction and operation of the proposed project, all vessels would travel the same channel used by the MARAD fleet to access Alameda Point. The channel begins just west of the proposed WETA facility and proceeds approximately 1 mile northwest to San Francisco Bay.

Project Construction

Construction of the proposed project would require 50 to 100 workers for the duration of the project. At any given time, roughly 30 to 50 workers would be on the site. Parking for construction workers could be made available by the City on the adjacent parking lot northeast of the site.

Landside Facility

The major landside construction activities include site preparation, demolition, ground improvement, bulkhead construction, building construction, and utility installation. Construction equipment would include backhoes, excavators, haul trucks, track-mounted drilling rigs, concrete and gravel delivery trucks, a wheeled hydraulic crane, and delivery and support trucks. All equipment would be powered by diesel or gasoline.

Excavation would be required to install the underground vaults and utilities. For the utilities, the landside excavation would range from 2,500 to 7,500 cubic yards (cy). Because of the historical uses of the site, a soil sampling program would be developed prior to construction. An appropriate disposal site for the excavated materials would be determined following the results of the soil sampling program.

The southern edge of the landside area is bounded by a deteriorated concrete seawall, which would be replaced. Removal of the seawall would require a land-based backhoe with pneumatic hammer, and would generate approximately 60–90 cy of concrete rubble. Removal would occur over 2 to 5 days and demolished concrete would require roughly 10–20 truck loads to be hauled off for processing as recycled aggregate material.

A concrete secant-pile wall would be constructed in place of the removed seawall. Details of the replacement wall would be determined after geotechnical explorations and analysis. The existing abandoned segment of railroad line that crosses the length of the site would also be removed during site development.

The building, including all ramps and platforms, would be designed to conform to ADA standards. The proposed facility would be in compliance with WETA's own security requirements as well as security requirements established by the U.S. Coast Guard (CFR 33 Parts 101–106) regarding vessel and terminal security regulations and guidance.

Marine Facility

The major waterside construction activities include dredging (refer to discussion below), marine pile installation, marine float installation, fixed pier construction, and marine utility and outfitting. The marine pile installation would require the use of a support and material barge, a barge-mounted pile driver, a support boat, and an occasional tug. The marine float installation would require work

boats, an occasional tug, support barges, and barge-mounted cranes. The fixed pier construction would require work boats, a support barge, a barge-mounted crane, a wheeled crane, and support and haul trucks. Marine utility and outfitting would require a wheeled crane and support trucks.

Approximately 85 new piles, consisting of fixed pier supporting piles, guide piles at the floats, fender piles, freestanding dolphins, and piles supporting the shoreline fender panel would be driven in place by a diesel impact hammer with the exception of the plastic fender pile, which would be driven in place with a vibratory hammer.

Required Dredging

The proposed project would require dredging to the required navigable parameters (berthing area depth of 12 feet mean lower low water [MLLW]), resulting in approximately 26,000 cy of dredged material. Dredging equipment would likely include a diesel-powered clamshell (with 10 cy bucket), scow dump barge (2,500 cy capacity), tug boats (900 horsepower), and a survey boat.

Because dredging and related pier removal could result in requirements for special handling of dredged material, a soil sampling program would be implemented prior to the start of construction. Sediment samples would be collected in accordance with the requirements of the United States Army Corps of Engineers (USACE) Dredged Materials Management Office (DMMO) prior to dredging. Prior to pier removal, a management plan would be prepared to ensure management of treated wood in accordance with the Department of Toxic Substances Control (DTSC) Treated Wood Waste guidance.

Dredging disposal sites would likely be at one of two locations, depending on results of environmental sampling. The first site, San Francisco Deep-Ocean Disposal site (SF-DODS) is located 50 miles offshore from San Francisco Bay. Sailing distance from the project site to SF-DODS is approximately 80 miles one way. The second site, Hamilton Airfield Wetland Restoration Site (Hamilton) is a confined disposal facility and is open 24 hours from mid-July to late November. Sailing distance from the project site to Hamilton is 30 miles one way. Of the sediment to be dredged, roughly 87% and 13% of the total volume would be clay and silt, respectively. If the sampled dredged material does not meet SF-DODS or Hamilton standards, the dredged material would be trucked to a Class 3 landfill.

Project Schedule

Construction of the proposed project would require approximately 16 months with no nighttime construction necessary. Generally, site preparation, and ground improvements would occur over 44 days; construction of the building and installation of utilities would require 300 days; dredging and in-water work (including removal and installation of the bulkhead) would be completed in 59 days; and the overwater work would occur over 241 days. All construction dredging and other in-water work activities (i.e., pile driving) would occur between the period from July 31 to November 30.

Operation and Maintenance

On any given day (weekday or weekend), a maximum of 42 to 58 employees would be on the premises, including 5 maintenance crew members, 1 supervisor, 1 WETA manager, 1 concessionaire, 2 OCC staff, 8 EOC staff (during emergency), and between 24 to 40 crew members.

Utilities

Potable water use during operation is expected to range between 100,000 and 200,000 gallons per week for boat resupply, for domestic use by onsite staff and crews, and to wash boats and equipment. The facility is expected to generate 75,000–150,000 gallons of wastewater per week. Trash and recyclables would be stored on the site and collected weekly.

Electricity would be provided by Alameda Municipal Power. The connected load for the site would be approximately 600–900 kilowatts. An emergency backup generator would be maintained on the site to support mission-critical equipment and life safety requirements in the event of an outage. The generator would be operated only during emergencies and during regular servicing.

Lighting

Lighting would be provided to cover deck areas, ramps, and platforms for line handling and maintenance. All lighting included as part of the proposed project would be at a baseline level suitable for general overall security and operations, with higher levels at site-specific task locations (loading areas, fuel connections, work sites, etc). Light levels would be provided in accordance with the latest version of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook.

Fuel Storage and Dispensing

Fuel would be delivered to the site by commercial fuel delivery tanker trucks using public roads. Between 30,000 and 40,000 gallons of fuel from a local provider would be delivered every 14 to 21 days. Delivery trucks would require the full width of West Hornet Avenue to make the turn to and from the site. The site layout accommodates this maneuver.

The site would be configured to allow fuel to be discharged to the onsite storage tanks by gravity flow in a secure and spill-contained area. The grating system and fuel supply would be weather protected by a sloped canopy or other rainfall isolating system. Fuel would be transferred via pumps, valves and pipes to a hose reel at the refueling berths to deliver fuel from the storage tank to the vessels. A 10–20 horsepower electric pump operating 6–8 hours per day would power the fuel system.

Between 1,000 and 2,000 gallons of lube oil would be delivered to the site monthly along with 5,000 gallons of urea. Waste oil would be collected monthly.

A Spill Prevention, Control and Countermeasures (SPCC) Plan would be prepared to include restrictions and procedures for fuel storage location, fueling activities, and equipment maintenance for operations. Training and communication protocols would be outlined to facilitate the prevention, response, containment, and cleanup of spills. The SPCC Plan would also include measures for spill control, contaminant prevention, cleanup, wastewater management, and other foreseeable hazards. The SPCC Plan would be prepared and implemented as a condition of approval for the proposed project and would comply with all applicable local, state, and federal regulations for the storage and transfer of diesel fuel and other fuels and hazardous materials used at the facility.

Parking

Off-site staff parking would be accommodated within walking distance of the facility subject to a formal lease agreement with the City of Alameda. A minimum of 2 spaces would be available on the site for delivery and occasional use. No shuttling would be required to transport employees to the facility. However, should the City of Alameda initiate development plans at Alameda Point, alternative sites for parking, as identified in the lease agreement between WETA and the City of Alameda, could require shuttling.

Maintenance Dredging

Maintenance dredging would be required with a frequency of once every 5 to 10 years. Dredging would necessitate the use of 3–4 barges, including one equipped with a crane/clamshell working one 10–12 hour day. All maintenance dredging would occur between the period from July 31 to November 30. Clean dredged material would be disposed of at SF-DODS open water disposal site located about 80 miles from the facility. If the dredged material does not meet SF-DODS standards, the dredged material would be trucked to a Class 3 landfill.

Required Permits and Approvals

Table 2-1 provides a list of anticipated consultations or permits and the project activities subject to regulation.

Table 2-1. Anticipated Permitting Requirements

Agency	Type of Permit/Authority	Subject Project Activity
San Francisco Bay Conservation and Development Commission	Administrative or Major Permit	Development within 100 feet from the Bay shoreline and placement of fill within the Bay.
Regional Water Quality Control Board, San Francisco Region	Clean Water Act, Sec. 402 Clean Water Act, Sec. 401	Impacts on waters of the State and stormwater discharge during construction.
U.S. Army Corps of Engineers	Clean Water Act, Sec. 404 Letter of Permission or Individual Permit Rivers and Harbors Act, Sec. 10	Discharge of dredged or fill material into wetlands or waters of the United States. Placement of structures in navigable waters.
U.S. Fish and Wildlife Service	Marine Mammal Protection Act Fed. Endangered Species Act, Sec. 7	Potential impacts on federally listed species and marine mammals.
National Marine Fisheries Service	Fed. Endangered Species Act, Sec. 7 Magnuson-Stevens Fishery Conservation and Management Act	Potential impacts on federally listed anadromous fish or marine species and essential fish habitat.
State Historic Preservation Office	National Historic Preservation Act, Sec. 106	Potential impacts on listed and/or eligible cultural resources.
City of Alameda	Use Permit	Approval for short- and long-term use of the site.

Public Involvement

WETA will provide a Notice of Intent (NOI) to adopt the MND pursuant to State CEQA Guidelines Section 15072 and will circulate the MND for a 30-day public and agency review pursuant to State CEQA Guidelines Section 15105(b). After the close of the review period, public and agency comments will be evaluated to determine whether they raise any issues that would require substantial revisions and recirculation of the MND.

Chapter 3
Environmental Checklist

1.	**Project Title:**	WETA Central Bay Operations and Maintenance Facility
2.	**Lead Agency/ Project Sponsor Name, Address, and Contact Person:**	San Francisco Bay Area Water Emergency Transportation Authority Pier 9, Suite 111, The Embarcadero San Francisco, CA 94111 Contact: Mike Gougherty (415) 364-3189
3.	**Project Location:**	This project is located southeast of the intersection of West Hornet Avenue and Ferry Point Road near Pier 3 in the City of Alameda, within the Naval Air Station Base Realignment and Closure area, known as Alameda Point.
4.	**General Plan Designation:**	Mixed Use Planned Development District (MX)
5.	**Zoning:**	General Industrial (M-2)

6. Description of Project:

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) proposes to construct a Central Bay Operations and Maintenance Facility (proposed project) to serve as the central San Francisco Bay base for WETA's ferry fleet, OCC, and EOC. The project site includes approximately 15,500 square feet (0.36 acre) of landside space and approximately one acre of waterside space in the San Francisco Bay.

The proposed project would provide running maintenance service such as fueling, engine oil changes, concession supply, and light repair work for all WETA ferry boats operating in the San Francisco Bay. The proposed project would also be the location for operational activities of WETA, including day-to-day management and oversight of service, crew, and facilities. In the event of a regional disaster, the facility would function as an EOC, serving passengers and sustaining water transit service for emergency response and recovery. The proposed landside building would be a four-story structure of approximately 25,000 square feet designed to Essential Facilities Standards (EFS) in accordance with the California Building Code (CBC). The landside building dimensions would be approximately 35 feet by 164 feet and would be about 75 feet tall. The proposed marine facility would have an overwater coverage of approximately 20,000 square feet (0.46 acre) and would provide berthing slips for up to 11 vessels with limited capacity to provide berthing for vessels in transit

7. Surrounding Land Uses and Setting:

The primary land uses in the project area are industrial. An undeveloped City-owned park and the San Francisco Bay Trail (Bay Trail), which is leased to the East Bay Regional Park District, are located adjacent to and east of the project site. Pier 3 and the aircraft carrier USS Hornet are located west of the project site, and an open paved area is located to the north.

8. Other Public Agencies Whose Approval Is Required:

Permits may be required from the following agencies:

- San Francisco Bay Conservation and Development Commission.
- San Francisco Regional Water Quality Control Board.
- U.S. Army Corps of Engineers.
- U.S. Fish and Wildlife Service.
- National Marine Fisheries Service.
- State Historic Preservation Office.
- City of Alameda.

Environmental Factors Potentially Affected

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agricultural and Forestry	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☒ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☒ Transportation/Traffic	☐ Utilities/Service Systems	☒ Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature: _____ Date: 3/30/2011

Printed Name: Michael Gougherty For: WETA

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained if it is based on project-specific factors as well as general standards.
2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "Potentially Significant Impact" to a "Less-than-Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level. (Mitigation measures from Section XVII, *Earlier Analyses,* may be cross-referenced.)
5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D]). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where earlier analyses are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts. Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

I. Aesthetics	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☒	☐	☐

Environmental Setting

The visual setting of the project area is predominantly industrial. The project site, which currently consists of undeveloped vacant land, is located within the formal NAS on Alameda Point. The City currently leases land on Alameda Point from the Navy and subleases land to a variety of tenants. Much of Alameda Point was intensely developed as a former military base, with an extensive road system serving the administrative and industrial buildings, warehouses, and piers.

Land uses in the immediate project vicinity consist of both land- and marine-related uses. A large, vacant parking lot bordering Hornet Avenue and forming a paved perimeter around two warehouses is located north of the site. To the west are three active piers (Piers 1, 2, and 3), used primarily for marine-related industrial uses. Currently, several military ships are moored at the piers, including the USS Hornet, a World War II-era aircraft carrier and museum that is open to the public and ships of the Ready Reserve maritime fleet. Areas east of the project site contain open space and recreational facilities, including the Bay Trail, which extends for approximately 1 mile along the shoreline and connects northeast of the project site to West Hornet Avenue. The trailhead at the West Hornet Avenue entrance includes a kiosk, bollards, and a park bench. A small park containing several picnic tables is located immediately east of the trailhead, and farther to the east is a soccer field (Hornet Field). To the south of the project site are the open waters of the Bay, with remnants of the former marina facility visible immediately south of the property and a breakwater visible in the distance, approximately 0.25 mile from the site.

The primary viewers of the project site are pedestrians and bicyclists on the Bay Trail, workers at the nearby warehouses and piers, and motorists on West Hornet Avenue. In addition to these viewers, soccer players and spectators at the soccer field east of the project site may be afforded limited views of the site, but views would be largely obstructed due to the tall chain link fencing that encloses the playing field. Additionally, passengers on the Alameda Bay Harbor Bay Ferry, which travels during weekday commute periods between the Ferry Building in San Francisco and the Harbor Bay Marina at Bay Farm Island, may have brief views of the site as the ferry passes Alameda

Point. However, current route maps indicate that the line-of-site distance to the project site would, at a minimum, exceed 0.25 mile at any one time, and views would be intermittent and short term. For these reasons, potential visual impacts on viewers at Hornet Field or on the ferry do not warrant additional analysis and are not discussed further in this section.

Impacts Discussion

a. The proposed project is not located in or near any designated scenic vistas and would not have an impact on a scenic vista. There would be no impact.

b. The proposed project is not located near or within a state scenic highway. There would be no impact.

c. Construction of the proposed project would be visible from surrounding land uses (e.g., Bay Trail and USS Hornet) and would temporarily alter the existing visual character and quality of the project site and vicinity. Although construction activities and equipment at the project site would be visible (at long range) from portions of the existing Bay Trail, views from the trail looking west would be dominated by the large military ships at Pier 3 (see Figure 3-1); views oriented south and east would be dominated by the open waters of San Francisco Bay and the southern shoreline (see Figure 3-2); and views looking north would be of the adjacent parking lot, which would remain largely vacant during construction with the exception of the vehicles and construction equipment that would be temporarily parked or staged at the site. Construction activities and equipment occurring in the site vicinity would not substantially affect the character or quality of views from the trail.

   Views from other locations around the site, including from the nearby docking facilities and industrial buildings and from Hornet Avenue, would not be affected. Project construction would be viewed within the context of the surrounding area, which is characterized by a variety of industrial activities and dominated visually by military ships and large pieces of industrial equipment, including multiple ship cranes. Construction would be short term and intermittent, lasting approximately 9–12 months. Therefore, due to the relative visual consistency of activities and equipment at the site and the limited extent and duration of construction activities, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.

   The proposed project would permanently alter the visual character of the site by introducing built elements—a landside facility, berthing floats, and gangways, and other facilities—on currently vacant property (see Figure 2-4 and 2-5). The landside portion of the project site consists of a concrete pad bordered on the north by open asphalt and abandoned railroad tracks, and on the south by a chainlink fence and riprapped seawall (see Figure 3-3). The waterside portion of the site consists of open water and the remains of the previous marina facility (see Figure 3-4).

   Although development of these areas would permanently alter the existing character of the site, the proposed facilities would be visually compatible with the existing industrial and marine land uses surrounding the site to the north, east, and west. Further, as part of the project and in consultation with the BCDC and the City of Alameda, WETA would implement one, or a combination thereof, of the three proposed Bay Trail access improvements that will improve public access, recreational opportunities in and around Alameda Point, and circumnavigate the secure MARAD facility. The proposed Bay Trail access improvement options would not affect the scenic quality or character of the trail itself or any scenic views from the trail. The visual character and quality of the site, and

Figure 3-1. Bay Trail, looking West Towards Project Site.

Figure 3-2. Bay Trail, Looking East towards Bay and Shoreline.

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Figure 3
Views of the Project Site

Figure 3-3. Project Site, looking West towards Pier 3.

Figure 3-4. Project Site, looking Southeast towards Remains of Previous Marina Facility.

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Figure 3 (continued)
Views of the Project Site

views of the site from the nearby docking facilities, industrial buildings, West Hornet Avenue, and the Bay Trail, are not expected to change substantially. Impacts are considered less than significant.

d. No nighttime lighting would be required during construction. Project construction would not create a new source of substantial light that could adversely affect nighttime views in the area. However, construction of the proposed project would create some increase in ambient glare as a result of sun reflecting from glass and metal surfaces of construction equipment. This impact is considered less than significant because the presence of construction equipment would be short term, the number of construction-related vehicles and activities at any one time would be limited, and the added glare would not be substantially more than the existing amount of glare being reflected off other vehicles, windows, open water, or other reflective surfaces in the vicinity of the site.

When completed, the proposed project would add new areas of pavement, metal, glass, painted wood, and the presence of ferry vessels with reflective glass surfaces to the viewshed. However, this increase would not significantly exceed glare from existing sources in the project vicinity. The project would also introduce new nighttime security and operational lighting. The creation of a new permanent light source would be considered a significant impact. Implementation of Mitigation Measure AES-1 would reduce long-term impacts related to new sources of light and glare to a less-than-significant level.

Mitigation Measure AES-1: Apply Minimum Lighting Standards

The project proponent will ensure that the following measures are incorporated into the design and construction of all project elements.

- Nighttime lighting will be used only where it is required for security or safety.
- If nighttime lighting is required, it will be focused onsite and will be directed downward; fixtures that project upward or horizontally will not be used.
- Any project lighting will include glare-minimizing fixtures, and the height of poles or mountings will be reduced to limit the potential for backscatter into the nighttime sky and incidental spillover of light.
- The design of exterior light fixtures will incorporate shielding to prevent fugitive glare.
- Luminaire mounts will have nonglare finishes.
- Luminaire lamps will provide good color rendering and natural light qualities. Low- and high-pressure sodium fixtures that are not color-corrected will not be used. Luminaire intensity will be the minimum necessary for safety.
- Lighting will be equipped with time-clock switches to ensure that illumination is restricted to nighttime hours.

II. Agricultural and Forestry Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Impacts Discussion

a., b., c., d., e. The project site occupies approximately 15,500 square feet (0.36 acre) of landside space in an industrial area of Alameda Point and approximately one acre of waterside

space in San Francisco Bay. The landside portion is entirely paved and contains no farmland, agricultural space, forest land, or timberland. The project site land use and zoning designations (i.e., in the City of Alameda General Plan or Alameda Point Specific Plan) do not conflict with any existing classification regarding forest land or timberland. The California Department of Conservation identifies Alameda Point as "Urban and Built Up Land" (CDOC 2008). The proposed project would not involve any changes to the environment that could result in the conversion of farmland to non-agricultural uses or the conversion of forest land to non-forest use; would not conflict with agricultural use or a Williamson Act contract. Therefore, the proposed project would have no impact.

III. Air Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting

Regional Climate and Topography

The proposed project is located in the San Francisco Bay Area Air Basin (SFBAAB). Climate within the SFBAAB is characterized by moderately wet winters and dry summers. Winter rains which occur in the months of December through March account for about 75% of the average annual rainfall.

Climate in the western portion of Alameda County, which encompasses the study area, is affected by marine air flow and the county's close proximity to the San Francisco Bay. Bay breezes push air onshore during the daytime and draw air from the land offshore at night. During the summer months, the Bay helps to cool the warm onshore flows, while during the winter months, it warms the air. This mediating effect keeps temperatures relatively consistent throughout the year. However, the Bay wind patterns can concentrate and carry pollutants from other cities to the area, adding to the locally emitted pollutant mix (BAAQMD 2010).

Air Quality Management

The air quality management agencies of direct importance in the project area are the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and the Bay Area Air Quality Management Agency (BAAQMD). The EPA and ARB have established national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS), respectively, for the following six pollutants: carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); ozone (O_3); particulate matter (PM), including PM less than 10 microns in diameter (PM10) and PM less than 2.5 microns in diameter (PM2.5); and lead. The ARB and the BAAQMD are responsible for ensuring that these standards are met. Refer to Table AQ-1 for a summary of the NAAQS and CAAQS.

Table AQ-1. Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.075	137	147	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.18	0.100	339	188	If exceeded	NA
Sulfur dioxide	SO_2	24 hours	0.04	NA	105	NA	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	0.075	655	196	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual arithmetic mean	NA	NA	20	NA	NA	NA
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	NA	NA	12	15	NA	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	35	NA	If 3-year average of 98th percentile at each population-oriented monitor within an area is exceeded
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA
		Rolling 3-month average	NA	NA	NA	0.15	If equaled or exceeded	Averaged over a rolling 3-month period
Source: ARB 2010a								

In addition to administration of air quality regulations developed at the federal and state levels, the BAAQMD is also responsible for implementing local strategies for air quality improvement and recommending mitigation measures for new growth and development. The BAAQMD recently adopted the 2010 Clean Air Plan to reduce pollutant emissions in the SFBAAB and improve regional air quality. In addition, the BAAQMD has established various rules and regulations to control air pollutant emissions. The following rules and regulations may be applicable to the proposed project:

Regulation 5, Open Burning: Forbids open burning within the BAAQMD.

Regulation 8, Rule 5, Storage of Organic Liquids: Limits the emissions of organic compounds from storage tanks.

Regulation 8, Rule 44, Marine Tank Vessel Operations: Limits the emissions of organic compounds from marine tank vessel operations. Note that sections 8-44-301 through 305 do not apply to loading of organic liquids associated with the fueling of marine vessels.

Regulation 9, Rule 8, NO_X and CO from Stationary Internal Combustion Engines: Limits the emissions of NO_X and CO from stationary internal combustion engines (only applicable if engines have an output rated by the manufacturer at more than 50 brake horsepower).

Existing Air Quality Conditions

Existing air quality conditions in the study area can be characterized in terms of the NAAQS and CAAQS by monitoring data collected in the region. The nearest air quality monitoring stations in the vicinity of the study area are the Oakland International Boulevard and Berkeley monitoring stations, which are approximately 7 miles southeast and northeast of the study area, respectively. Air quality monitoring data from these stations is summarized in Table AQ-2. These data represent air quality monitoring data for the last 3 years (2007–2009) in which complete data are available.

Table AQ-2. Air Quality Monitoring Data Measured at the Oakland International Boulevard and Berkeley Monitoring Stations

	Oakland Station			Berkeley Station		
Pollutant Standards	**2007**	**2008**	**2009**	**2007**	**2008**	**2009**
1-Hour Ozone						
Maximum 1-hour concentration (parts per million [ppm])	0.040	0.086	0.092	0.038	0.053	0.063
Second-highest 1-hour concentration (ppm)	0.040	0.083	0.084	0.036	0.052	0.063
1-hour California designation value	0.04	0.09	0.09	0.04	0.05	0.06
1-hour expected peak day concentration	-	-	-	-	-	0.056
Number of days standard exceeded[a]						
CAAQS 1-hour (>0.09 ppm)	0	0	0	0	0	0
8-Hour Ozone						
National maximum 8-hour concentration (ppm)	0.036	0.064	0.062	0.032	0.049	0.054
National second-highest 8-hour concentration (ppm)	0.036	0.063	0.060	0.032	0.047	0.053
State maximum 8-hour concentration (ppm)	0.037	0.064	0.063	0.032	0.049	0.054
State second-highest 8-hour concentration (ppm)	0.036	0.063	0.060	0.032	0.047	0.054
8-hour national designation value	-	-	0.049	-	-	0.040
8-hour California designation value	0.037	0.064	0.064	0.032	0.049	0.049
8-hour expected peak day concentration	-	-	-	-	-	0.051
Number of days standard exceeded[a]						
NAAQS 8-hour (>0.075 ppm)	0	0	0	0	0	0
CAAQS 8-hour (>0.070 ppm)	0	0	0	0	0	0
Carbon Monoxide (CO)						
National[b] maximum 8-hour concentration (ppm)	1.40	1.63	1.99	1.56	1.74	2.03
National[b] second-highest 8-hour concentration (ppm)	1.31	1.53	1.85	1.49	1.74	1.90
California[c] maximum 8-hour concentration (ppm)	1.40	1.63	1.99	1.56	1.74	2.03
California[c] second-highest 8-hour concentration (ppm)	1.31	1.53	1.85	1.49	1.74	1.90
Maximum 1-hour concentration (ppm)	2.9	2.9	-	-	-	-
Second-highest 1-hour concentration (ppm)	2.8	2.4	-	-	-	-
Number of days standard exceeded[a]						
NAAQS 8-hour (≥9 ppm)	0	0	0	0	0	0
CAAQS 8-hour (≥9 ppm)	0	0	0	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0	0	0	0
Particulate Matter (PM10)[d] (Berkeley)						
National[b] maximum 24-hour concentration (μg/m^3)	-	-	-	33.0	42.3	31.4
National[b] second-highest 24-hour concentration (μg/m^3)	-	-	-	12.5	38.9	31.0
State[c] maximum 24-hour concentration (μg/m^3)	-	-	-	35.8	43.5	33.5
State[c] second-highest 24-hour concentration	-	-	-	13.3	40.2	31.9

Pollutant Standards	Oakland Station			Berkeley Station		
	2007	2008	2009	2007	2008	2009
(μg/m³)						
State annual average concentration (μg/m³)[e]	-	-	-	-	22.4	18.3
Number of days standard exceeded[a]						
NAAQS 24-hour (>150 μg/m³)[f]	-	-	-	0	0	0
CAAQS 24-hour (>50 μg/m³)[f]	-	-	-	0	0	0
Particulate Matter (PM2.5)						
National[b] maximum 24-hour concentration (μg/m³)	22.8	30.1	36.3	-	-	-
National[b] second-highest 24-hour concentration (μg/m³)	22.3	25.9	34.1	-	-	-
State[c] maximum 24-hour concentration (μg/m³)	22.8	30.1	36.3	23.1	39.2	39.5
State[c] second-highest 24-hour concentration (μg/m³)	22.3	25.9	34.2	20.7	36.6	31.7
National annual designation value (μg/m³)	-	-	-	-	-	-
National annual average concentration (μg/m³)	-	9.4	9.2	-	-	-
State annual designation value (μg/m³)	-	9	9	-	13	13
State annual average concentration (μg/m³) [e]	-	9.5	-	-	12.9	9.9
Number of days standard exceeded[a]						
NAAQS 24-hour (>35 μg/m³)	0	0	3	-	-	-

Notes: CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
– = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

[d] Measurements usually are collected every 6 days.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been truncated for presentation.

Sources: ARB 2009; U.S. EPA 2009.

Table AQ-2 shows that the Oakland Boulevard monitoring station has experienced three violations of the federal ozone and PM2.5 standard in 2009.

Attainment Status

Areas are classified as either attainment or nonattainment with respect to state and federal air quality standards. These classifications are made by comparing actual monitored air pollutant concentrations to state and federal standards. If a pollutant concentration is lower than the state or federal standard, the area is classified as being in *attainment* of the standard for that pollutant. If a pollutant violates the standard, the area is considered a *nonattainment* area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated *unclassified*. Areas that were previously designated as nonattainment areas but have recently met the standard are called *maintenance* areas.

The EPA has classified Alameda County as a marginal nonattainment area for the federal 8-hour ozone standard and a nonattainment area for the federal PM2.5 standard. For the federal CO standard, the EPA has classified the Alameda Urbanized Area as a moderate maintenance area (ppm >12.7), while the rest of the county is classified as an attainment/unclassified area. Alameda County is classified as an attainment/unclassified area with regard to the federal PM10 standard (U.S. EPA 2010a).

The ARB has classified Alameda County as a serious nonattainment area for the state 1-hour ozone standard and a nonattainment area for the state 8-hour ozone, PM10, and PM2.5 standards. The ARB has classified Alameda County as an attainment area for the state CO standard (ARB 2010b).

Sensitive Receptors

The BAAQMD generally defines a sensitive receptor as a facility or land use that houses or attracts members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of sensitive receptors include schools, hospitals, convalescent facilities, and residential areas. The land surrounding the project includes a mix of general industrial and residential uses. The project site is within the NAS BRAC area, which primarily dominated by warehouses and facilities. There is one church within the Base, the Community Bible Church, which is located approximately 0.6 mile north of the project. Residential land uses run adjacent to the southern border of the Navel Base and are approximately 0.5 mile from the project site. Encinal High School and Paden Elementary School are located approximately 0.5 and 0.8 mile east of the project site, respectively.

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, an impact pertaining to air quality is considered significant if it would:

- Conflict with or obstruct implementation of an applicable air quality management plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.

or

- Create objectionable odors affecting a substantial number of people.

The State CEQA Guidelines further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations. The BAAQMD published significance criteria in the *2010 CEQA Guidelines* (BAAQMD 2010). Consequently, the proposed project would have a significant impact on air quality if it would exceed any of the thresholds summarized in Table AQ-3.

Table AQ-3. Summary of BAAQMD Thresholds

Pollutant	Construction Phase	Operational Phase
ROG	54 pounds per day	54 pounds per day
NO_X	54 pounds per day	54 pounds per day
PM2.5	54 pounds per day (exhaust only) or implement fugitive dust best management practices (BMPs)	54 pounds per day (exhaust only)
PM10	82 pounds per day (exhaust only) or implement fugitive dust BMPs	82 pounds per day (exhaust only)
CO	Exceed the CAAQS 1-hour or 8-hour standard	
TACs	Result in an increased cancer risk of 1 in 10 million or an increased non-cancer risk of >1.0 Hazard Index for sensitive receptors located within 1,000 feet of the project area; or increase PM2.5 concentrations by 0.3 $\mu g/m^3$ for sensitive receptors located within 1,000 feet of the project area	
Source: BAAQMD 2010		

Impacts Discussion

Emissions sources associated with the proposed project are the operation of construction equipment and marine vessels, minor use of volatile fuels during maintenance, and on-road vehicle travel for employee commutes and fuel delivery. Because the project was included in the emissions analysis for WETA's Implementation and Operations Plan (IOP) for ferry transit service expansion, this section tiers off the conclusions presented in the *Final Environmental Impact Report for Expansion of Ferry Transit Service in the San Francisco Bay Area* (Transit EIR) (URS Corporation 2003).

a. A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds growth estimates included in the applicable air quality plan, which, in turn, would generate emissions not accounted for in the applicable air quality plan emissions budget. Therefore, proposed projects must be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rates included in the relevant air plans.

The purpose of the proposed project is to serve as the central San Francisco base for WETA's ferry fleet, administrative office, and operations. The proposed project is neither population nor growth inducing and would not conflict with the planning assumptions in the City of Alameda General Plan. While the proposed project would generate relatively minor amounts of emissions associated with project construction and operation, these emissions are not expected to impede attainment or maintenance of the NAAQS or CAAQS by the BAAQMD. Consequently, the project would not conflict with or obstruct implementation of the applicable air quality plan. This impact is less than significant and no mitigation is required.

b. **Construction**: Construction activities associated with the proposed project would generate short-term emissions of ROG, NO_X, CO, PM10, and PM2.5 (refer to Section VII, *Greenhouse Gas Emissions*, for a discussion of GHG impacts). Emissions would originate from mobile and stationary construction equipment exhaust, employee vehicle exhaust, and dust from site clearing. Construction-related emissions would vary substantially depending on the level of activity, specific construction operations, and wind and precipitation conditions.

Construction emissions from onshore equipment and worker trips were estimated using the URBEMIS2007 (version 9.2.4) model. Emissions from dredging and tugs boats were estimated using EPA Tier II emission standards (ICF 2009). It is anticipated that construction would require 14 phases, beginning in October 2012 and ending in February 2014. Refer to Appendix A for additional construction modeling assumptions.

Table AQ-4 presents the daily construction emissions associated with each phase of the proposed project. As a worst-case scenario, the associated tasks during each phase were combined into a total maximum daily emissions value, because it is possible that these tasks could occur at the same time. Exceedences of the BAAQMD thresholds are highlighted with bold text.

Table AQ-4. Summary of Daily Maximum Construction Emissions (pounds per day)[a]

Phase	ROG	NO_X	CO	PM10			PM2.5		
				Total	Dust	Exhaust	Total	Dust	Exhaust
Phase 1	2.00	50.48	37.12	2.24	0.00	2.24	2.06	0.00	2.06
Phase 2	2.93	27.42	15.21	67.59	66.10	1.56	15.19	13.82	1.38
Phase 3	3.51	30.92	15.93	67.53	66.05	2.19	15.17	13.80	1.38
Phase 4	1.78	13.57	8.57	1.42	0.00	1.42	0.67	0.00	0.67
Phase 5	3.56	26.21	16.53	1.79	0.00	1.79	1.53	0.00	1.53
Phase 6	6.88	52.88	28.13	3.18	0.00	3.18	2.76	0.00	2.76
Phase 7	8.55	**78.81**	45.71	4.22	0.00	4.22	3.72	0.00	3.72
Phase 8	8.01	**79.13**	43.37	3.90	0.00	3.90	3.53	0.00	3.53
Phase 9	5.48	45.46	25.13	2.61	0.00	2.61	2.30	0.00	2.30
Phase 10	4.68	38.16	22.41	2.34	0.00	2.34	2.05	0.00	2.05
Phase 11	3.37	29.51	15.84	1.64	0.00	1.64	1.39	0.00	1.39
Phase 12	4.27	38.78	20.43	2.08	0.00	2.08	1.75	0.00	1.75
Phase 13	0.49	4.94	3.53	0.38	0.00	0.38	0.23	0.00	0.23
Phase 14	0.42	4.63	2.88	0.27	0.00	0.27	0.19	0.00	0.19
BAAQMD Threshold[b]	*54*	*54*	-	-	-	*82*	-	-	*54*
Significant?	No	Yes	-	-	-	No	-	-	No

[a] Refer to Appendix A for modeling assumptions, including phase tasks and equipment.
[b] No threshold; BAAQMD requires implementation of best management practices.

Based on the data presented in Table AQ-4, NO_X emissions generated during Phases 7 and 8 would exceed the BAAQMD's significance threshold of 54 pounds per day.These emissions are primarily generated by onshore equipment (e.g. backhoe, crane, etc.) and by in-water equipment (e.g. workboats and tugs).

The BAAQMD requires all projects implement standard emission control measures to reduce fugitive dust during construction. Consequently, Mitigation Measure AQ-1 is required for onshore construction activities. Implementation of Mitigation Measures AQ-2 and AQ-3 are required to reduce NO_X emissions. Table AQ-5 summarizes mitigated emissions and demonstrates that implementation of Mitigation Measures AQ-1 through AQ-3 will reduce emissions to less than significant.

Mitigation Measure AQ-1: Implement BAAQMD Basic Control Measures to Control Construction-Related Fugitive Dust

The project applicant will implement the following BAAQMD-recommended basic control measures to reduce particulate matter emissions from onshore construction activities.

- All unpaved exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site will be covered.
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
- Post a publicly visible sign with the telephone number and contact person at the Lead Agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District's phone number will also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-2: Implement BAAQMD Basic Control Measures to Control Construction-Related NO_X Emissions

The project applicant will implement the following BAAQMD-recommended basic control measures to reduce NO_X emissions from construction equipment.

- Idling times will be minimized by shutting off equipment when it is not in use or by reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage will be provided for construction workers at all access points.
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Mitigation Measure AQ-3: Modify the Construction Schedule to Ensure Daily NO_X Emissions Do Not Exceed 54 Pounds

The project applicant will implement the construction schedule outlined in Appendix A to ensure daily NO_X emissions do not exceed 54 pounds per day. Any proposed deviation from the construction schedule outlined in Appendix A shall be reviewed by WETA prior to implementation to ensure phasing and use of in-water and on-shore equipment will not result in significant NO_X emissions.

Table AQ-5. Summary of Mitigated Daily Maximum Construction Emissions (pounds per day)

Phase	ROG	NO_X	CO	PM10			PM2.5		
				Total	Dust[a]	Exhaust[b]	Total	Dust[a]	Exhaust[b]
Phase 1	2.00	50.48	37.12	2.24	0.00	2.24	2.06	0.00	2.06
Phase 2	3.02	21.95	15.21	31.96	31.07	0.89	7.26	6.50	0.76
Phase 3	3.51	24.75	15.93	32.56	31.04	1.52	32.50	31.74	0.76
Phase 4	1.78	10.87	8.57	1.10	0.00	1.10	0.37	0.00	0.37
Phase 5	3.56	20.99	16.53	1.06	0.00	1.06	0.86	0.00	0.86
Phase 6	2.20	12.87	10.44	0.70	0.00	0.70	0.53	0.00	0.53
Phase 7	5.98	31.82	23.38	1.36	0.00	1.36	1.15	0.00	1.15
Phase 8	2.15	12.82	9.87	0.61	0.00	0.61	0.51	0.00	0.51
Phase 9	4.76	44.56	29.52	1.73	0.00	1.73	1.54	0.00	1.54
Phase 10	4.68	30.93	22.41	1.40	0.00	1.40	1.19	0.00	1.19
Phase 11	4.68	30.93	22.41	1.40	0.00	1.40	1.19	0.00	1.19
Phase 12	3.37	24.02	15.84	1.03	0.00	1.03	0.83	0.00	0.83
Phase 13	4.27	31.82	20.43	1.34	0.00	1.34	1.07	0.00	1.07
Phase 14	0.49	4.36	3.53	0.33	0.00	0.33	0.19	0.00	0.19
Phase 15	0.42	4.10	2.47	0.23	0.00	0.23	0.25	0.00	0.25
BAAQMD Threshold	*54*	*54*	-	-	-	*82*	-	-	*54*
Significant?	No	No	-	-	-	No	-	-	No

[a] Fugitive dust emissions have been reduced by 53%, pursuant to Mitigation Measure AQ-1 (BAAQMD 2010)
[b] PM exhaust emissions from off-road equipment have been reduced by 45%, pursuant to Mitigation Measure AQ-3

b. **Operation:** Ferry movement generates emissions from fuel combustion. However, the Transit EIR found that the ferry system expansion would result in a reduction of ozone precursors and particulate emissions overall from vessels. Maintenance and berthing of vessels is part and parcel of the ferry system. Consequently, emissions from vessel movement were not quantified as implementation of the project would result in an air quality benefit from these sources.

Another potential source of operational emissions is from the on-site diesel storage tanks and diesel fueling of vessels. Diesel fuel has limited volatile organic compound content compared to gasoline. As such, evaporative emissions from diesel fueling activities and storage were not quantified for this analysis as they were assumed to be negligible given the limited volatile properties of diesel fuel and thus would not result in significant air pollutant emissions.

Thus, the primary sources of long-term operational emissions are exhaust from employee commutes and delivery vehicles. Table AQ-4 presents a summary of the operational emissions associated with the proposed project. These emissions would result from employee commutes, fuel delivery vehicles, and facility natural gas consumption. In addition, emissions would be generated by channel maintenance. Because maintenance dredging would be conducted only every five to ten years, the emissions presented in Table AQ-6 represent the maximum daily emissions that would be generated during those times when channel maintenance occurs. Refer to Appendix A for modeling assumptions and procedures.

Table AQ-6. Summary of Operational Emissions (pounds per day)

Summary	ROG	NO_X	CO	PM10	PM2.5
Emissions	3.08	51.79	33.99	2.34	2.15
BAAQMD Threshold	54	54	-	82	54
Significant?	No	No	n/a	No	No

The data in Table AQ-6 show that operational emissions are not expected to exceed the BAAQMD thresholds. This impact is considered less than significant and no mitigation is required.

c. Implementation of the proposed project would not create a significant air quality impact (discussed in the response to Item b.) following implementation of Mitigation Measures AQ-1 through AQ-3. Therefore, a cumulatively considerable net increase of any pollutant would not occur. Implementation of Mitigation Measures AQ-1 through AQ-3 would reduce impacts to a less-than-significant level.

d. Diesel particulate matter (DPM), which the ARB classifies as a carcinogenic toxic air contaminant, is the primary pollutant of concern with regards to health risks to sensitive receptors. Ferries entering and exiting the berthing facility for fueling will emit diesel exhaust. DPM emitted by these vessels can remain airborne for several days. However, due to prevailing winds and meteorological conditions at the project site (discussed above), particulates are expected to be well dispersed. Further, there are no sensitive receptors within 1,000 feet of the project site (the nearest is approximately 0.5 mile from the site). Moreover, as discussed in the Transit EIR, PM emissions from the ferry transit service expansion program would be less than those from the no-project alternative. Diesel-powered equipment operating during construction is also a potential source of DPM. However, construction is only anticipated to last for a maximum of 12 months, which is well below the recommended cancer risk assessment period of 70 years. In addition, Mitigation Measures AQ-2 and AQ-3 will help reduce DPM emissions during construction. DPM levels generated by the proposed project are therefore neither expected to exceed the BAAMQD thresholds, nor result in increased health risks to sensitive receptors within 1,000 feet of the project area. This impact is considered less than significant.

e. The generation and severity of odors is dependent on a number of factors, including the nature, frequency, and intensity of the source; wind direction; and the location of the receptor(s). Typical facilities known to produce odors include landfills, wastewater treatment plants, manufacturing plants, and certain agricultural activities. Implementation of the proposed project would not result in the addition of any of these facilities.

Diesel fuel stored in the underground tanks and combusted onsite may create minor odors. However, because diesel is not considered a violate fuel and all liquid would be stored underground

in sealed tanks, evaporative emissions, and thus odors, are expected to be negligible. Odors emitted during construction would be temporary and localized, and they would cease once construction activities have been completed. Likewise, odors generated by idling vessels would be small, and would quickly be dissipated by even light winds. Thus, it is not anticipated that the operation or the construction of the proposed project would create objectionable odors. This impact is considered less than significant.

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

Methods

The study area for biological resources for construction is defined as the construction limit (i.e., the area within which construction activities would occur) for the proposed landside and marine-side facilities and the construction staging area shown in Figure 2-2. The study area for operations includes the berthing/maintenance facility as well as the access channel from the facility to the open waters of San Francisco Bay that may be indirectly affected by vessels as they approach and depart the facility. The study area includes the shoreline of Alameda Island north of the access channel and Breakwater Island which is south of the access channel.

The methods used to identify biological resources in the study area consist of a prefield investigation and reconnaissance survey.

Prefield Investigation

In preparation for the reconnaissance survey, ICF International biologists reviewed the following sources of information to evaluate the potential for special-status species or other sensitive biological resources (e.g., waters of the United States) to occur in the study area:

- California Natural Diversity Database (California Department of Fish and Game 2010) records for nine U.S. Geological Survey (USGS) 7.5-minute quadrangles: Oakland West, Oakland East, San Leandro, Hunters Point, San Francisco South, San Francisco North, San Quentin, Richmond, and Briones Valley.
- California Native Plant Society's (CNPS) online *Inventory of Rare and Endangered Plants* for the Oakland West USGS 7.5-minute quadrangle (California Native Plant Society 2010).
- U.S. Fish and Wildlife Service's (USFWS) list of endangered and threatened species that occur in or may be affected by the proposed project for the Oakland West USGS 7.5-minute quadrangle and Alameda County (U.S. Fish and Wildlife Service 2010).
- USFWS Draft Comprehensive Conservation Plan for the Proposed Alameda National Wildlife Refuge (USFWS 1998).
- Eelgrass monitoring surveys (Merkel and Associates 2004, 2005).

This information was used to create tables identifying special-status plants and wildlife known to occur in the project vicinity (Table BIO-1 and Table BIO-2) (Appendix B).

Special-Status Species

For the purpose of this analysis, *special-status species* is a collective term that refers to plants and animals that are legally protected under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or other regulations, as well as species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants and animals fall into the following categories:

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and in various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (74 FR 57804, November 9, 2009).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Species that meet the definitions of "rare" or "endangered" under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.).
- Plants considered by CNPS to be "rare, threatened, or endangered in California and elsewhere (CNPS List 1B)" (California Native Plant Society 2001).

- Plants listed by CNPS as plants about which more information is needed to determine their status, and plants of limited distribution, which may be included as special-status species on the basis of local significance or recent biological information.
- Animal species of special concern to the Department of Fish and Game (Remsen 1978 [birds], Williams 1986 [mammals], and Jennings and Hayes 1994 [amphibians and reptiles]).
- Animals fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).

This information was also used to develop lists of special-status species that could be present in the project vicinity.

Reconnaissance Survey

On October 4 and 6, 2010, ICF biologists conducted reconnaissance surveys of the study area to document vegetation community types, evaluate the biological conditions in the study area, and determine the potential for presence of special-status species. The survey was conducted on foot, noting the species observed and taking photographs.

Environmental Setting

The existing conditions for the study area, vegetation communities, special-status plant and wildlife species, and waters of the United States are discussed below. The study area falls within the Central Coast geographic subregion of the Central Western California region in the California Floristic Province (Hickman 1993:45) and is located in the Oakland West USGS 7.5-minute quadrangle. Landside elevations in the study area range from about 6 feet msl at the shoreline to less than 10 feet above msl at the northern boundary of the site (Treadwell & Rollo 2010). Depths in the marine portion of the study area range from sea level to approximately 40 feet below sea level.

Facility Location

The only terrestrial vegetation community present at the proposed facility location is ruderal annual grassland, and the waterside of the facility location is open bay habitat. The biological communities and wildlife uses of the study area are described below.

The study area is located in an industrial area. Large ships are docked in the area adjacent to the proposed project, and the surrounding area includes existing buildings and paved areas, mainly parking lots. A portion of the San Francisco Bay Trail runs along the water's edge immediately east of the landside part of the study area. The bank is riprapped, and the waterside of the study area has floating debris from the old dock and pilings of the Alameda Point Pier. The area beyond the edge of the waterside of the study area is enclosed by a breakwater[4] with two openings for water craft to travel.

[4] A barrier that protects a harbor or shore from the full impact of waves.

Biological Communities

Ruderal Annual Grassland

Although most of the landside portion of the study area is concrete, ruderal annual grassland occurs in small unpaved patches, although the dominant vegetative cover is ice plant (*Carpobrotus* sp.). Ruderal grassland includes a mixture of nonnative annual grasses, including wild oat (*Avena fatua*), crabgrass (*Digitaria sanguinalis*), and seaside grass (*Hordeum marinum*), and forbs, including false goldenaster (*Heterotheca sessiliflora*), ice plant, and stinkwort (*Dittrichia graveolens*). A row of nonnative planted trees is at the south edge of West Hornet Avenue, which lies between the landside portion of the project site and the construction staging area. The unpaved park area east of the study area also includes several planted trees.

Open Bay

The waterside portion of the study area is primarily unvegetated open water in the San Francisco Bay. The construction area ranges in depth from -5 feet below sea level to -40 feet below sea level. The edge of the riprap supports two small (less than 5 square feet) patches of pickleweed (*Salicornia* sp.). At low tide, green algae (Division Chlorphyta) growing on the rocks is exposed, but no eelgrass was observed on the immediate shoreline or the shallow waters of the study area. Review of Merkel & Associates (2004, 2005) eelgrass survey reports indicate that eelgrass is not present in the project area nor is there suitable habitat. Substrate material in the project area consists of mud/silt/clay (NOAA et al 2010).

Marine Access Channel

The access channel for the proposed facility consists of the same channel used by the MARAD fleet to access Alameda Point. The channel has been periodically dredged to a depth of 42 feet below mean lower low water in the past to maintain access. The channel begins just west of the proposed WETA facility and proceeds approximately 1 mile northwest to San Francisco Bay.

Refuge Southern Shoreline

The southern shoreline west of the Seaplane Lagoon is protected by riprap. No vegetation is found at the riprap.

Breakwaters

There are two breakwaters south of the proposed facility location. The first is a riprap breakwater (referred to as “Long Breakwater”) that starts at the Alameda Island shoreline southeast of the proposed facility, then proceeds southward for approximately 700 feet, and then westward for approximately 4,800 feet. This breakwater is accessible from the shoreline. There is a small 180-foot gap between the first breakwater and Breakwater Island, which is referred to as “Breakwater Gap”. Breakwater Island consists of a riprap breakwater approximately 2,800 feet in length that is on a southeast to northwest orientations. The breakwater is not accessible from the shoreline. No vegetation is found at the breakwaters.

Open Bay

The channel is approximately 2,000 feet at its western end measured from the nearest distance from the southern part of the proposed refuge to the westernmost tip of Breakwater Island. The open bay area is approximately 1,400 feet wide between Pier 3 and the breakwater.

Wildlife Uses of the Study Area

Proposed Facility Location

Birds observed in the waterside portion of the study area near the proposed facility during the 2010 reconnaissance survey include double-crested cormorant (*Phalacrocorax auritus*), herring gull (*Larus argentatus*), American coot (*Fulica americana*), brown pelican (*Pelecanus occidentalis californicus*), great blue heron (*Ardea herodias*), and snowy egret (*Egretta thula*). Numerous terns were also observed foraging in this area, but the species was not identified. These and numerous other shore and sea birds could use the study area for foraging and resting areas. A seal was also observed swimming near the proposed facility location during the site visit, but the species was not identified.

Proposed Alameda National Wildlife Refuge

The boundary of the proposed Alameda National Wildlife Refuge is approximately 0.5 mile west of the proposed WETA facility. The refuge is proposed for approximately 565 acres of land and 413 acres of open water, which includes the 2,862-foot-long Breakwater Island near the southern boundary of the Refuge (USFWS 1998).

Alameda Island

The land portion of the proposed refuge consists of engineered fill areas, some of which have had soils and vegetation and wetlands areas that have formed over the years, as well as paved areas of the former NAS runways. The land portion of the proposed refuge provides habitat for a number of federally listed species including California least tern (*Sterna antillarum browni*), and Western snowy plover (*Charadrius alexandrinus nivosus*). There is suitable habitat for the salt marsh harvest mouse (*Reithrodontomys raviventris*), but surveys have not confirmed the presence of this species to date. Non-listed species that nest on the land portion of the proposed refuge include Caspian terns (*Sterna caspia*), California gulls (*Larus californicus*), Western gulls (*Larus occidentalis*), and other bird species. American peregrine falcons (*Falco peregrines*) forage for avian prey in the land portion of the refuge as well (USFWS 1998).

Breakwaters

Harbor seals use the tip of Breakwater Island as a haul-out site and forage extensively in the Breakwater Gap area. Although it is not considered a primary haul-out site for San Francisco Bay, Breakwater Island is reportedly the only haul-out site in the central Bay that is accessible to seals throughout the full tidal range. Aerial surveys of seal haul-outs conducted in 1995-97 and incidental counts made during summer tern foraging studies conducted in 1984-93 usually counted fewer than 10 seals present at any one time. There is some evidence that more harbor seals have been using Breakwater Island in recent years, or that it is more important as a winter haul-out. Seventy-three seals were counted on Breakwater Island in January 1997, and 20 were observed hauled-out on

April 4, 1998. A small pup was observed during May 1997; however, site characteristics are not ideal for the island to be a major pupping area (USFWS 1998).

Breakwater Island contains the second largest nesting colony of western gulls in central and northern California. In June 1990, 239 western gull nests were counted on Breakwater Island, and a breeding population of 502 western gulls was estimated for the entire Alameda NAS. In May 1998, 215 Western gull nests were counted, although the majority of these had been destroyed by a dog. Breakwater Island also is a roosting site for three cormorant species, at least six gull species, at least eight shorebird species, and at least two species of egrets and herons (USFWS 1998)

A large colony of California brown pelican roost on Breakwater Island during late summer through fall. The colony is the largest roost and the only known night roost in the San Francisco Bay Area. Pelicans eat small surface-schooling fish, primarily anchovy, in the adjacent Bay (USFWS 1998).

At least 25 species of waterbirds are known to forage around the gap between the breakwaters, particularly in its tidal eddies. These species include the Forster's tern (*Sterna forsteri*), Caspian tern, five species of grebe, at least seven duck species, at least two loon species, three cormorant species, the mew (*Larus canus*) and western gull, and the American coot (LSA Associates 2002).

There is likely some bird use of Long Breakwater; however since this area is accessible from the shoreline, and thus is more likely to experience human-related disturbance, it is less likely to be used for nesting. Similarly, it is less likely to be used as a seal haul out in favor of Breakwater Island.

Marine Areas

Fish species frequently found in the open water of the San Francisco Bay include topsmelt (*Atherinops affinis*), jacksmelt (*Atherinopsis californiensis*), Pacific herring (*Clupea harengus*), northern anchovy (*Engraulis mordax*), arrow goby (*Clevelandia ios*), striped bass (*Morone saxatilis*), shiner perch (*Cymatogaster aggregata*), yellowfin goby (*Acanthogobius flavimanus*), and Pacific staghorn sculpin (*Leptocottus armatus*) (Butler pers. comm. 2010). Within open bay areas, other organisms include those that float in the water column, such as zooplankton; those that swim in the water column, such as fish and mammals; and those that live in the sediment bottom (benthic invertebrates, crustaceans, and mollusks).

Special-Status Species

Sensitive plant, wildlife, and fish species that were identified as potentially occurring in the project region are listed in Tables BIO-1 and BIO-2 (Appendix B).

Plants

Because the study area is mostly paved on the landside and provides no suitable habitat for special-status plants, Table BIO-1. Special-Status Plant Species with Potential to Occur in the Study Area (Appendix B) was based on the CNDDB records search and CNPS online inventory search results for only the Oakland West 7.5-minute quadrangle. Based on the results of the CNDDB and CNPS searches and a review of the USFWS list, 17 special-status plant species were identified as having the potential to occur in the project vicinity (California Department of Fish and Game 2010; California Native Plant Society 2010; U.S. Fish and Wildlife Service 2010). Appendix B provides the listing status, distribution, habitat requirements, recorded blooming period of these species, and their potential to occur in the study area. The study area does not support suitable habitat for

special-status plants, and there are no CNDDB records for occurrences of special-status plant species in the study area (California Department of Fish and Game 2010). Therefore, no special-status plant species are likely to occur in the study area.

Wildlife

Based on the results of the nine-quad CNDDB records search, a review of the USFWS list for the quad and county, and species distribution and habitat requirements data, a total of 38 special-status wildlife species were determined to have the potential to occur in the project region (California Department of Fish and Game 2010; U.S. Fish and Wildlife Service 2010). Fifteen of these were eliminated from potentially occurring in the study area because the study area is outside of the species' expected range, or the study area lacks suitable habitat. The remaining 23 special-status species have potential to occur in the study area. The listing status, distribution, habitat requirements for these species and their potential to occur in the study area are provided in Appendix B.

Of the 23 special-status wildlife species identified as having potential to occur in the study area, 16 would not occur in the study area because of the lack of suitable habitat. The remaining six species, California brown pelican, Western snowy plover, northern harrier , white-tailed kite (*Elanus leucurus*), California least tern, and southern sea otter (*Enhydra lutris nereis*), have the potential to occur in the study area and to be affected by the proposed project. The potential for the project to impact these species is discussed below in the *Impacts Discussion* section.

Non-special-status migratory birds, including raptors, also have the potential to nest in trees in the study area near the proposed facility location or at the proposed Alameda National Wildlife Refuge or to forage in the area. Although these species are not considered special-status wildlife, their occupied nests and eggs are protected under California Fish and Game Code (Sections 3503 and 3503.5) and the Migratory Bird Treaty Act (MBTA) discussed in the *Regulatory Setting* section.

Marine mammals such as harbor seals and California sea lions (*Zalophus californicus californianus*) also occur in the study area and in nearby parts of San Francisco Bay. Other marine mammals less commonly observed in the San Francisco Bay (and less likely to occur in the study area) include gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera noveangliae*), harbor porpoise (*Phocoena phocoena*), northern elephant seal (*Mirounga angustirostris*), Steller sea lion (*Eumetopius jubatus*), and northern fur seal (*Callorhinus ursinus*).

Fish

Special-status fish species with potential to occur in the study area include central California coast steelhead distinct population segment (DPS) (*Oncorhynchus mykiss*), several Chinook salmon runs and green sturgeon southern DPS (*Acipenser medirostris*), both of which are federally listed as threatened and longfin smelt (*Spirinchus thaleichthys*), a state-listed threatened species (CDFG 2010), may also occur in the study area.

The study area encompasses critical habitat for green sturgeon. Critical habitat for green sturgeon is designated in San Francisco Bay and includes the project area (74 FR 52300 October 9, 2009). Pacific Coast salmon include Chinook salmon and coho salmon (Butler pers. comm.). During the spawning migration, several Chinook salmon runs, including the federally endangered winter-run Chinook salmon (*Oncorhynchus tshawytscha*), enter San Francisco Bay from the Pacific Ocean, then head north to the Sacramento River (LSA Associates 2002).

Additionally, essential fish habitat (EFH) is present in the study area for Pacific groundfish, coastal pelagics, and Pacific Coast salmon. Pacific groundfish species include species of rockfishes, flatfishes, sharks, etc. Coastal pelagic species include northern anchovy, Pacific sardine, and jack mackerel.

Pacific herring (*Clupea pallasii*) spawns periodically in the Estuary. Pacific herring is a state species of special concern because it is an important forage fish for many marine species. Typically, the herring spawns between December and February, but spawning activity has been documented as late as mid-March.

Waters of the United States

The only water of the United States that is present in the study area is the San Francisco Bay, which is considered a traditional navigable water (TNW). TNWs fall within USACE jurisdiction under the federal Clean Water Act (CWA) (discussed in the *Regulatory Setting* section). The waterside part of the study area is located entirely within the Bay. No wetlands are present in the study area.

Regulatory Setting

Federal

Endangered Species Act

USFWS and the National Marine Fisheries Service (NMFS) have jurisdiction over species listed as threatened or endangered under Section 9 of ESA. In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fish, and USFWS is responsible for other listed species. ESA protects listed species from *take*, which is broadly defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." USFWS issues a biological opinion and, if the project does not jeopardize the continued existence of the listed species, issues an incidental take permit.

Clean Water Act

The CWA was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA is administered by the U.S. Environmental Protection Agency (EPA) and USACE. USACE is responsible for regulating the discharge of fill material into waters of the United States (including lakes, rivers, streams, and their tributaries) and wetlands. Wetlands are defined for regulatory purposes as areas that are "inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987:13).

The discharge of dredged or fill material into waters of the United States is subject to permitting under CWA Section 404. Certification from the applicable regional water quality control board is

also required when a proposed activity may result in discharge into navigable waters, pursuant to CWA Section 401 and EPA's Section 404(b)(1) guidelines.

On June 5, 2007, the EPA and the U.S. Department of the Army issued a memorandum titled *Clean Water Act Jurisdiction* following the U.S. Supreme Court's Decision in *Rapanos v. United States* and *Carabell v. United States* that states that the agencies will assert jurisdiction over the following categories of water bodies: TNWs, wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively permanent, and wetlands that abut such tributaries.

Migratory Bird Treaty Act

The MBTA (Title 16, United States Code [USC], Part 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 Code of Federal Regulations [CFR] 21, 50 CFR 10). Most actions that result in taking of or the permanent or temporary possession of a protected species constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. The Migratory Bird Permit Memorandum, dated April 15, 2003, clarifies that destruction of most unoccupied bird nests is permissible under the MBTA; exceptions include nests of federally threatened or endangered migratory birds, bald eagles, and golden eagles. USFWS is responsible for overseeing compliance with the MBTA. Most bird species and their occupied nests that occur in the project area are protected under the MBTA.

Marine Mammal Protection Act

The MMPA (Title 16, USC, 1361-1421h), adopted in 1972, makes it unlawful to take or import any marine mammals and/or their products. An incidental harassment permit may be issued by NMFS under to cover activities for up to 1 year and with negligible effects on the species. The MMPA includes two levels of harassment. Level A harassment is defined as any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal in the wild. Level B harassment is defined as harassment having potential to disturb marine mammals by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

State

California Endangered Species Act

California implemented the California Endangered Species Act (CESA) in 1984. CESA prohibits the take of state-listed endangered and threatened species; however, habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery, and to promote conservation of these species. DFG administers CESA and authorizes take through Section 2081 agreements (except for species designated as fully protected).

California Environmental Quality Act

CEQA is the regulatory framework by which California public agencies identify and mitigate significant environmental impacts. Although threatened and endangered species are protected by specific federal and state laws, the State CEQA Guidelines Section 15380(b) provides that a species not listed under ESA or CESA may be considered rare or endangered, if it can be shown that the species meets certain specific criteria. The criteria have been modeled after the definitions in ESA and sections of the California Fish and Game Code discussing rare and endangered plants and animals.

The State CEQA Guidelines define rare, threatened, or endangered species as those listed under ESA and CESA, as well as any other species that meets the criteria of the resource agencies or local agencies—for example, DFG-designated species of special concern and plant species identified by CNPS as being of conservation interest.

California Fish and Game Code

Fully Protected Species

The California Fish and Game Code (CFGC) prohibits take of fully protected species per Section 5050 (amphibians and reptiles), Section 3515 (fish), Section 3511 (birds), and Section 4700 (mammals). The CFGC defines *take* as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited. DFG cannot issue take permits for fully protected species.

Sections 3503 and 3503.5

CFGC Section 3503 prohibits killing birds and destroying occupied bird nests. Section 3503.5 prohibits killing raptor species and destroying occupied raptor nests.

Porter-Cologne Water Quality Control Act

Section 13260 of the California Water Code requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Water Quality Control Act definition, the term *waters of the State* is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the State, the converse is not true—in California, waters of the United States represent a subset of waters of the State. Therefore, the State of California retains authority to regulate discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under CWA Section 404.

Local

McAteer-Petris Act and San Francisco Bay Plan

The BCDC has state-authorized "Bay jurisdiction" over San Francisco Bay and all territory located between the Bay shoreline and a line 100 feet inland of and parallel with the shoreline. Within its area of jurisdiction, BCDC is authorized to control both Bay filling and dredging, and Bay-related shoreline development. The McAteer-Petris Act (Public Resources Code Section 66600 et seq.)

requires permits for placing fill, extracting minerals, or changing the use of any land, water, or structure within BCDC jurisdiction. The BCDC issues the permits under the Act and also carries out determinations of consistency with the Federal Coastal Zone Protection Act for federally sponsored projects.

BCDC Permit eligibility and conditions of permit issuance are largely governed by the San Francisco Bay Plan (Bay Plan), completed and adopted by BCDC in 1968 and amended regularly since then. The plan was most recently amended in July 2001. The Bay Plan contains findings and policies related to fish and wildlife, water quality, fill, recreation, public access, and the appearance and design of shorelines, as well as procedures for BCDC control of filling, dredging, and shoreline development. In addition to compliance and coordination with other federal and state regulations and policies discussed in this section, Bay Plan policies are also aligned with USACE's Long Term Management Strategy (LTMS) and are focused "to assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased."

Impacts Discussion

a. **Special-Status Plant Species:** Based on a search of the CNDDB (2010), the CNPS Inventory (2010), species lists obtained from the USFWS and species distribution and habitat requirements, a list was compiled with 17 special-status plant species known to occur in the project region. Because the study area is mostly paved on the landside and is open water habitat on the waterside, it lacks suitable habitat for special-status plants. Because no special-status plants are likely to occur in the study area due to the lack of suitable habitat, the proposed project would not affect special-status plants. There would be no impact.

Construction Impacts on Special-Status Wildlife Species: Six special-status wildlife species have the potential to occur in the study area. These species include five birds (California brown pelican, western snowy plover, northern harrier, white-tailed kite, and California least tern) and one marine mammal (southern sea otter). In addition, two other non-listed marine mammal species, harbor seal and California sea lion, protected by the MMPA, could also be affected by the project.

A California least tern breeding population is known to nest on the NAS, located approximately 1 mile from the proposed facility location. Though the construction area does not contain suitable California least tern breeding habitat, this species could use the open bay portion of the study area for foraging. As discussed below, there is no eelgrass that would be affected by construction, but terns could forage in open water areas. Because this species is considered extremely sensitive to disturbance, especially during the breeding season, and because successful nesting and foraging are believed to be critical to the species recovery, dredging that causes significant turbidity could result in decreased foraging success (USFWS 2006). According to the 2001 *Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region Management Plan*, California least tern foraging may be affected by turbidity from dredging in coastal waters and sloughs within 1 mile of the coastline from Berkeley Marina south through San Lorenzo Creek (USACE 2001). The LTMS specifies that dredging activities within this potential impact area should not occur during the tern foraging period (March 15–July 31). Because the proposed project is located within this area where potential foraging effects may occur, WETA would limit dredging and other in-water work (e.g., pile-driving) to occur outside of this sensitive period. Therefore, potential foraging impacts to California least tern related to dredging activities would be less than significant.

Southern sea otter, though not known to occur in the study area, is known to occur in the San Francisco Bay and could forage in the open bay portion of the study area. This species is protected under the ESA, is considered a fully protected species by CDFG, and is afforded protection under the MMPA, discussed above under the *Regulatory Setting* section. Project construction, particularly dredging and pile driving activities could harass or otherwise harm this species if present in the study area and therefore the following avoidance and minimization measures in Mitigation Measure BIO-1 would be implemented prior to and during construction. Harbor seals and California sea lions, both protected by the MMPA, could also be affected by construction both in terms of dredging and pile-driving activities as well as vessel traffic, particularly near Breakwater Island. Implementation of Mitigation Measures BIO-1 and BIO-2 would ensure that marine mammals would not be affected by project construction activities and therefore this potential impact would be less than significant.

California brown pelican, northern harrier, western snowy plover, and white-tailed kite have potential to forage but not to nest in the construction area. Project construction activities, including increased boat traffic, may cause these species to avoid foraging in the construction area and the immediately adjacent area (where construction noise would be heard) for the duration of construction. This impact would be temporary and would not significantly affect any of these species due to the abundance of foraging habitat surrounding the project area. However, vessel traffic near Breakwater Island could disrupt pelican and other migratory bird nesting. Mitigation Measure BIO-2 below is proposed to reduce this impact to a less-than-significant level.

Mitigation Measure BIO-1: Minimize Harassment to Marine Mammals during Dredging and Pile Driving Activities

- During the project permitting phase, NMFS will be consulted to determine if an Incidental Harassment Authorization would be needed for dredging or pile driving activities.
- Work would occur only during daylight hours (7 a.m. to 7 p.m.) so that marine mammals are visible at all times during dredging and pile driving activities.
- A qualified biological monitor would visually survey the area 1 day prior to the start of dredging or pile driving activities to establish a baseline.
- A safe zone would be enforced during dredging and pile driving operations. A marine mammal monitor would survey the area prior to the startup of dredging or pile driving equipment.
- Installation would not begin until no marine mammals are sighted within a designated “safe zone” for at least 15 minutes prior to the initiation of the activity.
- For dredging or pile driving activities, the proposed safety zone would be a radius of 1,000 feet from the dredging or pile driving location or distance at which the noise would be below 180 dB.
- Once activities begin, work would continue until completed. Between pile driving of different piles, the monitor would again confirm that the safety zone is clear of marine mammals.
- The construction contractor would establish daily “soft-start” or “ramp-up” procedures for pile-driving activities. This technique would be used at the beginning of each piling installation to allow any marine mammal that may be in the area to leave before pile driving

activities reach full energy. The contractor would provide an initial three strikes at reduced energy (40%), followed by a 1-minute waiting period, then subsequent 3-strike sets.

Mitigation Measure BIO-2: Use Recommended Access Channel and Boat Speeds from the Draft Alameda National Wildlife Refuge Comprehensive Conservation Plan to avoid Disruption to Seal Haul-Outs and Bird Nesting and Roosting.

The draft Conservation Plan for the Alameda National Wildlife Refuge includes a recommended 500-foot access corridor for all vessel traffic and a maximum 5 mile per hour speed limit to keep vessels well away from the shoreline of the main portion of the Refuge as well as from Breakwater Island, in order to protect bird species and marine mammals from disruption. All construction and maintenance vessels and all ferry boats shall utilize this access corridor and shall, under all non-emergency situations, not approach any closer than 750 feet to the shorelines of the proposed Refuge and Breakwater Island.

Operational Impacts on Special Status Wildlife Species

Routine operations at the proposed WETA facility would have little to no effect on special-status wildlife species because there is limited wildlife use of the facility location itself; however, operational impacts to special-status wildlife species would occur in relation to infrequent maintenance dredging and due to vessel traffic.

As discussed above, the land-side of the project provides little to no habitat for wildlife. As such, routine land-side operations would have little to no effect on terrestrial wildlife. Routine marine operations at the dock could have effects on special-status wildlife species in the event of a spill during fueling or maintenance. See Section IX, *Hydrology and Water Quality*, for a discussion of potential water quality impacts and mitigation.

Dredging effects due to infrequent dredging would have similar impacts as those discussed above for initial construction dredging. Dredging would follow the established work window for California least tern. With this control, dredging impacts would be less than significant.

Operational noise resulting from vessel traffic from the WETA facility to San Francisco Bay could disturb special-status wildlife species. Noise due to vessel traffic could disturb use of adjacent shoreline areas if traffic were to approach too close to areas utilized by wildlife. As noted above, Breakwater Island is used as a haul-out site for seals and nesting or roosting areas for California brown pelicans, gulls, and other bird species. Vessel traffic close to Breakwater Island could cause seals or birds to flush and could disturb nesting and resting. Given the importance of the isolated Breakwater Island to a number of species protected by the MMPA and the MBTA, vessel traffic is considered to result in a potentially significant impact. This impact can be mitigated to a less than significant level through implementation of Mitigation Measure BIO-2 above.

Construction and Operational Impacts on Special-Status Fish Species and Common Fish Species: Project in-water work activities could increase noise and disturbance, reduce prey abundance, disrupt food production and availability, release excess sedimentation, increase turbidity, and release contaminants, all of which would temporarily disrupt fish habitat and potentially cause injury or mortality to fish.

Direct Impacts of Dredging

Dredging would occur outside of the known migration season for salmonids, longfin smelt, and Pacific herring. Dredging is allowed in the Central Bay from June 1 to November 30 (LTMS Environmental Windows Work Group 2004). A mechanical dredger that avoids longfin smelt would be used. However, green sturgeon are present year round and could become entrained in the dredge. Take of green sturgeon is theoretically possible, however the potential for actual take and number of fish that might be affected from dredging is unknown. Therefore, dredging is considered a potentially significant impact. Implementation of Mitigation Measure BIO- 2 would reduce impacts to a less-than-significant level.

Pile Driving during Construction

Pile driving would be required for the construction of the berthing floats and gangways. Noise, vibrations, and other physical disturbances can harass fish, disrupt or delay normal activities, or cause injury or mortality. In fish, the hearing structures and swim bladder and surrounding tissues are particularly vulnerable to high pressure sounds (Popper et al. 2006). The type and severity of effects depends on several factors, including the intensity and characteristics of the sound, the distance of the fish from the source, the timing of actions relative to the occurrence of sensitive life stages, and the frequency and duration of the noise-generating activities. The range of effects potentially includes behavioral changes, physiological stress, physical injury (including hearing loss), and mortality.

Based on proposed construction activities, the effects of noise on fish would be primarily limited to avoidance behavior in response to movements, vibrations, and noise caused by construction personnel and equipment operating in or adjacent to the San Francisco Bay. However, underwater pile driving noise may reach levels sufficient to cause injury or mortality of fish. Potential exposure of adult and juvenile salmonids to pile driving sounds would be minimized by conducting all in-water pile driving activities during a single construction season between July 31 and November 30 when the lowest numbers of salmonids and Pacific herring are likely to be present in the action area. However, juvenile and adult green sturgeon may still be present during this time.

Since 2000, transportation agencies, resource agencies, ports, and other entities have been developing criteria for determining impacts and appropriate mitigation measures to protect fish from underwater pile driving sounds. In 2004, the California Department of Transportation (Caltrans) established a Fisheries Hydroacoustic Working Group (FHWG) to facilitate the development of interim criteria based on best available scientific information. The FHWG includes participants from Caltrans, Washington Department of Transportation, Oregon Department of Transportation, NMFS, USFWS, DFG, and USACE. The FHWG is supported by a panel of hydroacoustic and fisheries experts and is overseen by a steering committee composed of managers with decision making authority from each of the members' organizations.

In June 2008, the member agencies of the FHWG agreed in principle to interim criteria for assessing injury to fish from underwater pile driving noise. These criteria identify sound pressure levels of 206 dB peak and 187 dB accumulated sound exposure level (SEL) as thresholds for the onset of physical injury to fish ≥2 grams. For fish <2 grams, the accumulated SEL is 183 dB. Physical injury to fish is expected if either of these thresholds is exceeded. These criteria apply to impact pile driving and are not considered appropriate for assessing the effects of vibratory pile driving, which likely has a higher threshold for injury (Caltrans 2009). Based on previous research using continuous

wave sound on gouramis and goldfish (Popper et al. 2006), Popper recommended a threshold of 220 dB for accumulated SEL as a reasonable starting point for identifying a threshold for vibratory driving. The ultimate threshold will likely be between 187 and 220 dB. There has been no formal agreement on the criteria that should be applied to vibratory pile driving (Caltrans 2009).

There is also no formal agreement on the thresholds that should be used to evaluate the potential for adverse behavioral effects from underwater pile driving noise. NMFS and USFWS generally use 150 dB RMS as the threshold for behavioral effects for listed salmonids. Although no scientific support for this criterion is available, it is considered a general threshold for identifying potential behavioral responses (e.g., avoidance or alarm response) that could disrupt normal activity patterns or decrease the ability of fish to avoid predators.

NMFS developed a spreadsheet that estimates the distance at which pile driving sound attenuates to threshold levels (i.e., maximum distance from the source that pile driving sounds would exceed the injury and behavioral threshold levels). This spreadsheet, based on the practical spreading loss model, requires estimates of the peak, SEL, and root-mean-square quantity (RMS) sound pressure levels generated by proposed pile driving activities and an assumed rate of attenuation[5].

For the proposed project, all of the structural piles in the water would be driven in place by a diesel impact hammer and would require approximately 350–450 hammer strikes to put each pile in place. This is an estimated number of strikes required as no geotechnical explorations at the site have been performed nor have the engineers determined the required structural capacity of the piles.

The plastic fender pile would likely be driven in place with a vibratory hammer and would not create significant underwater noise. It would require 10–20 minutes of vibration to put each plastic pile in place.

Assessment of pile-driving noise was based on measured sound levels for similar pile driving projects. Sound analysis was done both with and without attenuation. Without attenuation, the peak sound level for the largest steel pile (30-inch steel pipe) is 205 db. The peak sound pressure level using an attenuation method (i.e. bubble curtain) is (195 dB), slightly below the injury threshold of 206 dB for fish ≥2 grams. Estimation of the cumulative SEL requires an estimate of the duration of pile driving activities in a single day. The project engineer estimated that 3 to 12 piles would be driven per day during in-water pile driving operations, with an actual drive time for each pile ranging from 10 to 30 minutes per pile, assuming the hammer operates continuously. A total of 60 piles ranging from 18 inches to 30 inches would be driven by an impact hammer. Assuming an attenuation factor of 15 based on typical values for steel pipe piles (Caltrans 2009), the model calculated a cumulative SEL with attenuation to be 206 dB at a distance of 10 meters from the pile and a maximum distance of 158 meters where the potential injury of fish would occur, assuming that fish remain in this zone for an entire day of pile driving. Without attenuation, a distance of 1,000 meters could cause injury to fish <2 grams. The maximum distances of 158 meters and 1,000 meters is limited by the distance to the "effective quiet" SEL, which is the distance at which the single-strike SEL attenuates to 150 dB. Beyond this distance, no physical injury is expected regardless of the number of strikes.

Based on these computations, peak sound levels generated by pile driving activities would be within established thresholds for the protection of fish. However, cumulative sound levels sufficient to cause potential injury to fish would occur within 1,000 meters of pile driving activities without

[5] Refer to Caltrans (2009) for a detailed discussion of the model, sound metrics, and computations.

attenuation. This assumes that fish would remain in this zone for an entire day of pile driving operations and no attenuation would be used. However, green sturgeon, salmonids or herring present in the study area during the time of pile driving (July 31 through November 30) would likely be large juveniles and adults, and therefore capable of readily moving out of this zone before harmful levels are reached. Once pile driving begins, individual fish approaching the study area from upstream or downstream are likely to detect the sounds and avoid or bypass the potential impact zone, which would extend only part way across the channel. Opportunities for fish to avoid pile driving sounds would also occur during periods when pile driving ceases (e.g., re-positioning of equipment) and at night when pile driving would be suspended.

Implementation of Mitigation Measure BIO-3 would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-3: Coordinate with Appropriate Federal and State Agencies to Reduce Impact on Special-Status and Common Fish Species during In-Water Work

WETA will consult with NMFS and DFG to implement measures to reduce impacts associated with in-water work activities to special-status fish species. These measures could include but are not limited to the following:

- In-water work activities will occur outside the peak juvenile outmigration periods for special-status fish species whenever possible. June 1 to November 30 (the dredging window in the Central Bay) would avoid high migratory periods.
- Using bubble curtains to attenuate pile driving sounds.
- A vibratory hammer will be used when feasible.
- Monitoring sound attenuation.

As a performance standard, the selected measures will represent the best available technology that is economically achievable, and will achieve maximum feasible reduction in underwater sound pressure levels (SPLs) and/or related impacts on special-status fish species.

Construction and Operation Impacts on the Local Food Web Due to Dredging: Dredging activities during construction and operation (once every 5 to 10 years) of the proposed project may negatively affect food production and availability for species such as green sturgeon and groundfish (i.e. flounder, halibut). Dredging has the potential to modify shallow bay habitats areas and remove bottom substrates, including the benthic organisms found in those substrates that may produce food for green sturgeon and other benthic feeding fish species. The area of prey habitat affected by dredging may total up to 4.77 acres. Due to the small size of the area excavated compared to the central Bay, construction and operation of the proposed project would not have a substantial impact on the overall availability of benthos to fish species. Dredging is expected to have minimal effect on prey availability for green sturgeon and other benthic fishes, especially over the long term, because:

- Similar bottom substrates in adjacent channel reaches (both laterally and longitudinally) would be available.
- Benthic invertebrates are expected to re-colonize bottom substrates disturbed by dredging relatively quickly, based on changes in benthic invertebrate abundance observed in response to changes in salinity (Markham 1986; Vayssieres and Peterson 2003) and dredging.

- Placement of material in restoration areas would avoid impacts of sedimentation on the benthic community that is often associated with in-water disposal of dredge spoils.

This impact to the local food web would be less than significant.

Construction and Operational Impacts to Aquatic Species from Contamination: The effect on fish and other aquatic species from water-borne contaminants depends on the species' sensitivity to specific types and combinations of contaminants; the concentration, duration, and frequency of exposure; water temperature conditions; and other factors. Contaminants may reduce growth, reproduction, movement, and survival of individuals. Long-term or acute exposure over a substantial proportion of a species' habitat may reduce abundance, distribution, and production in the population and could affect the diversity of aquatic communities.

Release of petroleum and other products during construction and operation could result in direct or indirect injury of both adult and juvenile fish. Operational effects of boats entering and leaving the offloading area could also increase contaminants in the proposed project area.

As part of the project BMPs, a spill prevention, control and countermeasures (SPCC) Plan would be developed that would include environmental commitments to address potential spill or exposure issues that may occur. This would include spill control, contaminant prevention, wastewater management, and other foreseeable hazards. Further, implementation of Mitigation Measure HYD-1: Preparation and Implementation of Project SWPPP (Section IX, *Hydrology and Water Quality*) would also ensure BMPs would be applied to minimize the discharge of pollutants from the site during construction. Implementation of these measures is anticipated to minimize impacts on the local fish populations to less-than-significant levels.

Construction and Operational Impacts to Aquatic Species from Sedimentation and Turbidity: The mobilization and transport of sediment results in turbidity (i.e., the relative clarity of water that may be reduced by suspended sediment), affects the behavior, growth, reproduction, and movement of fish and other aquatic organisms and may consequently affect foraging of birds and marine mammals. Construction activities have the potential to generate sediment plumes. Release of sedimentation may occur from dredging and pile driving.

In general, the Central Bay is a naturally turbid environment. Based on a review of effects to aquatic species from exposure to suspended solids, as presented in Newcombe and MacDonald (1991), a threshold value of 1,500 mg/L was chosen for this assessment.[6] Although modeling performed for another project at the Port of Oakland indicates that suspended sediment concentrations would reach up to 1,500 mg/l at distances between 2 and 31 m from dredging, turbidity effects related to construction activities would be short-term and would cease once these activities are complete. Sediment particle size, angularity of particle, and duration of sediment plume are all factors that would influence a fish's response to turbidity, and fish would tend to exhibit avoidance behavior when exposed to excessive turbidity.

Turbidity generated by construction of the marine facility would likely degrade habitat within the mixing zone adjacent to the facility; however, for the reasons cited above, it is not anticipated to be lethal to fish. Additionally turbidity control measures for project construction would be in place.

[6] 1,500 mg/L as a threshold value was based on a study of juvenile Chinook salmon which showed histological damage to gills after exposure to 1,547 mg/L total suspended solids for 96 hours (Noggle 1978, as cited in Newcombe and MacDonald 1991). Juvenile Chinook salmon are considered to be one of the most sensitive species that may be exposed to elevated levels of suspended solids.

Implementation of Mitigation Measure HYD-2: Monitor for Turbidity during Dredging Activities (Section IX, *Hydrology and Water Quality*) is anticipated to minimize effects on the local fish populations to less than significant levels.

Operational Impacts due to Shading: The overwater coverage of the existing structures at the site is approximately 20,220 SF (square feet) (consisting mainly of floats, booms, and gangway). The total overwater coverage of the new facility is estimated to be approximately 20,000 SF (floats, gangways, and fixed pier). The project would thus slightly decrease permanent shaded benthic areas in the Bay and thus the impact is less than significant and no mitigation is required.

Construction and Operational Increase of Fish Predation Due to New Structures: Overwater and in-water structures can alter underwater light conditions and provide potentially favorable holding conditions for adult fish, including species that prey on juvenile fishes. Barge shading during construction and dredging would be temporary and occur primarily during the summer when few juvenile salmon and steelhead would be present. As noted above, the project study area has existing structure and shading conditions would be roughly the same as at present. The new facility would have approximately 50 more piles than under existing conditions. The piles would provide a variable amount of vertical structure depending on the tidal stage. The presence of additional piles may result in localized increased in predation rates on juvenile fish relative to existing conditions. However, predation rates on juvenile fish at this location are unknown and the areas of increased structures are small compared to the overall size of San Francisco Bay. This impact would be less than significant.

b. One sensitive natural community, open bay habitat, occurs in the study area. Project impacts on the open bay community would include dredging, marine pile and float installation, fixed pier construction, and utility installation. Approximately 0.46 acre (20,200 square feet) of the open bay habitat is currently covered by the existing floating marina structures, and the new facility would cover slightly less (up to 20,000 square feet). There are 35 existing piers visible within the study area. Project effects on the bottom surface would include the installation of 85 new 2-foot-diameter piers, which would total approximately 0.006 acre (267 square feet) of new structures. Project construction could cause temporary disturbance of the Bay bottom due to dredging and pier installation and of open water habitat due to release of sediments into the water.

   Construction in open bay habitat would require regulatory permits under the CWA and the McAteer-Petris Act. In addition, mitigation is required to address potential water quality impacts (see Section IX, *Hydrology and Water Quality*). Given the limited area of disturbance, the minimal change to open water habitat conditions compared to the existing environment, implementation of requirements under the necessary permits, and mitigation for water quality effects, this impact would be reduced to a less-than-significant level.

c. There are no wetland habitats in the study area. The unvegetated open bay habitat is considered other waters of the United States. The proposed project would have no impact on federally protected wetlands.

d. **Marine Mammals:** Marine mammals, such as harbor seal and California sea lion could move through the marine portions of the study area and haul-out on Breakwater Island (though pupping is unlikely). As described above, Mitigation Measures BIO-1 would protect marine mammals from impacts related to dredging and pile-driving activities during construction and Mitigation Measure BIO-2 would protect the haul-out area on Breakwater Island from disruption due to project vessel

traffic. With the implementation of these measures, impacts to marine mammals movement and potential breeding would be less than significant.

Migratory Birds: Nesting non-special-status migratory birds including raptors could forage within the study area, within nests on adjacent Breakwater Island and in grassland and trees near the landside facility. Project construction activities, including increased boat traffic, may cause these species to avoid foraging in the construction area and adjacent area where construction noise would be heard. This impact would be temporary and would not significantly affect these species because foraging habitat surrounding the project area is abundant; however, project construction activities could disturb non-special-status migratory bird nests if present in adjacent grasslands or trees. Implementation of Mitigation Measure BIO-4 would ensure that nesting disturbance does not occur thereby reducing this potential impact to a less-than-significant level.

Operational vessel traffic near Breakwater Island could disrupt non-special status migratory bird nests, which would be a significant impact. Implementation of Mitigation Measure BIO-2, above, would ensure that nesting disturbance does not occur through the use of the recommended access channel and limiting boat speeds, reducing this potential impact to a less-than-significant level.

Mitigation Measure BIO-4: Avoid and Minimize Impacts on Nesting Migratory Birds Including Raptors

- Preconstruction bird surveys will be conducted by a qualified biologist no more than 1 week prior to the start of construction for activities occurring during the breeding season (February 1 to August 31).
- If active raptor nests are found within 500 feet of where work is to occur, or active passerine nests are found within 100 feet of where work is to occur, a non-disturbance buffer will be established at a distance sufficient to minimize nest/roost disturbance based on the nest location, topography, cover, species' sensitivity to disturbance, and the intensity/type of potential disturbance. The buffer size would be determined in cooperation with the CDFG and the USFWS.
- If rescheduling of work around active nests/roosts is infeasible, a qualified biologist will monitor nests for signs of disturbance. If it is determined that project activities are resulting in nest/roost disturbance, work will cease immediately and the CDFG and the USFWS will be contacted.

Benthic-Dwelling Organisms: Project construction, specifically the construction of in-water structures, would result in the loss of established native benthic-dwelling organisms. These organisms generally include benthic invertebrates, mollusks, and crustaceans, which are common to the San Francisco Bay ecosystem and to California. Though these organisms provide an important function within the San Francisco Bay ecosystem the loss of these organisms (and their habitat) would be limited to the in-water construction footprint. During construction a minimal additional area adjacent to the construction footprint would likely experience increased turbidity which could also result in mortality of these organisms but because the San Francisco Bay is considered to be a relatively turbid environment the effect on increased turbidity is expected to be minimal. The minimal loss of common benthic dwelling organisms would not be considered a significant impact and no avoidance or minimization measures are required.

Native Olympia oysters (*Ostrea conchaphila*) are also known to occur in the San Francisco Bay. While native oysters are not a state or federally listed species or other special-status species they

are considered a historical keystone species for the Bay. Oysters have been found by UC-Davis south of the study area at or near the Encinal Boat Launch approximately 0.5 mile southeast of the proposed WETA facility (Zabin et al. 2010). Native oysters are not known to occur within the study area; however because no surveys have been conducted in the study area their absence cannot be confirmed. Because the project area has not been used as a marina or other official use since the base closed in 1997, the area likely remained fairly undisturbed during this time possibly providing a stable, protected environment for this species. The open bay portion of the study area may provide suitable substrates for this species along the floor of the Bay. Additionally this species could attach to the underside of the old dock and piling and other in-water structures within the study area. In order to avoid and minimize impacts to native oysters the following mitigation measure would be implemented. Implementation of Mitigation Measure BIO-5 would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-5: Survey for Native Oysters and Relocate (if necessary)

WETA will conduct a pre-construction diving survey to determine if native oysters are present in the study area. If found within or immediately adjacent to the construction footprint, WETA would request guidance from NMFS (or other applicable agency) as to the need and or feasibility to move affected beds.

e. As described under checklist item a., the project would be required to comply with 2001 *Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region Management Plan*, with regards to sensitive work periods for California least tern (USACE 2001).

San Francisco Bay is designated as coastal estuary Habitat Area of Particular Concern (HAPC) by NMFS. Eelgrass (*Zostera marina L.*) is designated as seagrass HAPC and occurs in San Francisco Bay. Seagrass HAPC provides habitat for fish species under the Pacific Groundfish Fishery Management Plan (FMP).

The bathymetry of the project area ranges from -5 to -40 feet below sea level. A study was conducted by Merkel & Associates, Inc. (2004) to identify eelgrass in San Francisco Bay using a habitat suitability model and to determine locations where eelgrass could occur. Eelgrass was not found at the project site, and modeled results of habitat suitability for eelgrass found the project site had very low habitat suitability. During the site reconnaissance, eelgrass was not found on any side of the project site within 500 feet. No trees would be removed as part of the project, and therefore no local tree ordinances would apply. The proposed project would not conflict with any local policies or ordinance protecting biological resources. Impacts would be less than significant.

f. There are no habitat conservation plans (HCPs) or natural community conservation plans (NCCPs) covering the project site. Because no HCPs or NCCPs cover the project site, no impacts would result. The proposed facility is approximately one mile from the proposed Alameda Wildlife Refuge (AWR) for which there is a draft Conservation Plan (USFWS 1998). As discussed previously, vessel traffic associated with project construction and operation would cross through the marine portion of the proposed Refuge. Implementation of Mitigation Measure BIO-2 would constrain vessel traffic to the access channel and limit speed limits to 5 miles per hour, which was identified in the draft Conservation Plan for the proposed Refuge. With this mitigation, the proposed project would be consistent with current planning for the proposed Refuge, and impacts would be less than significant.

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Environmental Setting

Prehistoric Context

Milliken et al. (2007) present a series of six periods of development for San Francisco Bay Area prehistory, which are summarized below.

- **The Early Holocene (Lower Archaic), 8000–3500 calibrated (cal) BC:** During this time, the Bay Area appears to have been occupied by a widespread but sparse population of hunter-gatherers. Tools used during the Early Holocene include the millingslab and handstone, as well as a variety of large, wide-stemmed and leaf-shaped projectile points (Milliken et al. 2007:114).
- **The Early Period (Middle Archaic), 3500 to 500 cal BC:** This period is characterized by use of rectangular *Haliotis* and *Olivella* shell beads (Ingram 1998; Wallace and Lathrop 1975:19) and the mortar and pestle. Burial complexes with ornamental grave associations and elliptical house floors with postholes represent a movement from forager to semi-sedentary land use (Milliken et al. 2007:115).
- **Lower Middle Period (Initial Upper Archaic), 500 cal BC to cal AD 430:** This period is characterized by a new suite of decorative and presumed religious objects that resulted from a disruption in symbolic integration systems. New bone tools, including barbless fish spears, tubes, and whistles first appeared during this period, as well as coiled basketry (Bennyhoff 1986:70; Bieling 1998:218).
- **Upper Middle Period (Late Upper Archaic), cal AD 430 to 1050:** During this period, the *Olivella* saucer bead trade network collapsed, and three *Olivella* saddle bead horizons developed consecutively. A burial from the Santa Rita village site (CA-ALA-413) yielded the largest known California bead lot (30,000 *Olivella* saucer beads) found so far. The Meganos mortuary complex spread from the interior bay-ward, as observed at the Fremont BART site (CA-ALA-343), and single-barbed bone fish spears, ear spools, and large mortars all appeared for the first time.
- **Initial Late Period (Lower Emergent), cal AD 1050 to 1550**: During this period, new levels of sedentism, status ascription, and ceremonial integration emerged in lowland central California (Milliken et al. 2007:116). New forms of *Haliotis* ornaments, mortars, and *Olivella* bead types—

initial markers of the Augustine Pattern—appeared. The quantity of shell beads contained in burials decreased; however, the quality of burial items in high-status burials and cremations increased (Fredrickson 1994b:62).

- **Terminal Late Period: Protohistoric Ambiguities, cal AD 1550 to 1776:** During this period, new artifact types and mortuary objects emerged. The signature *Olivella* sequin and cup beads of the central California L1 Bead Horizon abruptly disappeared, and clamshell disk beads, markers of the L2 Bead Horizon, spread across the North Bay. An upward cycle of regional integration was likely commencing when it was interrupted by Spanish settlement in the Bay Area, beginning in 1776 (Milliken et al. 2007:118).

Ethnographic Context

At the time of European contact, the San Francisco Bay Area was occupied by a group of Native Americans known as the Costanoans, or *Ohlone*. The term *Costanoans*, which is derived from the Spanish *Costaños*, meaning coast people, was attributed to this group by the Spanish explorers and early settlers (Levy 1978:485).

The Huchiun and Jalquin groups of Ohlone Indians lived closest to the project area. Huchiun lands seem to have extended over a large area along the East Bay shore, from Temescal Creek opposite the Golden Gate north to at least the lower San Pablo and Wildcat Creek drainages in the present area of Richmond (Milliken 1995:228 [map], 243). The Jalquins lived in the interior East Bay hills east of Oakland or San Leandro (Milliken 1995:228 [map], 244–245).

The first Spanish foray into Ohlone territory was conducted by Sebastían Vizcaíno, who in 1602 traveled through what is now the Monterey area. The first mission to be established in Ohlone territory was San Carlos de Borromeo in 1770. In general, Mission life was devastating to the Ohlone lifeway. Mission padres discouraged or banned traditional customs, rites, and rituals. In addition, interaction with the Spanish caused the introduction of disease to local populations. By 1832, Ohlones numbered less than 2,000 as a result of introduced diseases, harsh living conditions, and reduced birth rates (Cook 1943a, 1943b, Levy 1978:486).

Under the Mexican government, secularization of mission lands began in earnest in 1834. Most of the former mission land was divided among Mexican subjects, and the Ohlone who chose to remain in their ancestral territory usually became squatters. Some were given jobs as manual laborers or domestic servants on Mexican ranchos or, later, American cattle ranches (Milliken 1995).

Since the 1980s, the modern Ohlone community has undergone a period of revitalization based on familial ties and former rancheria affiliations. Although they have yet to receive formal recognition from the federal government, the Ohlone are becoming increasingly organized as a political unit and have developed an active interest in preserving their ancestral heritage.

Historic Context

Early History

The study area is located in the City of Alameda, Alameda County. Alameda County was formed from portions of Santa Clara and Contra Costa counties in 1853, and the City of Alameda formally organized in 1884. The Island of Alameda was created in 1902 when a tidal canal (the “Estuary”) was created joining Oakland's harbor with the San Leandro Bay (Marschner 2000:249).

The Alameda Point region of the island is sited on former marshland and tidal flats. By 1820, the land was part of the vast 44,800-acre Rancho San Antonio Spanish land grant that included all of what is now the city of Alameda and part of the City of Oakland. Land development in the area occurred at a slow pace throughout the nineteenth century. In 1850, California became the 31st state, and William W. Chipman and Gideon Aughinbaugh purchased a 1,960-acre section of the Rancho San Antonio in that same year. The tract, which was called Bolsa de Encinal, generally comprised the future site of the city of Alameda, including NAS Alameda. Although Chipman and Aughinbaugh sold off sections of Bolsa de Encinal to land speculators and real estate developers in the early 1850s, the region remained largely unsettled because of poor access and was primarily used for pastureland and agriculture. By 1864, transportation improvements into the area included the first alignment of the San Francisco & Oakland Railroad, which extended from eastern Alameda to the southwestern tip of Alameda Point. Soon thereafter, the community of Woodstock developed and the land around Alameda Point included railroad shops and a wharf (Jones & Stokes 2007:2–5).

Woodstock briefly served as the western terminus of the Transcontinental Railroad. During the latter half of the nineteenth century, the region continued to grow and by 1872, the area known as Woodstock was included in the incorporation of the City of Alameda. Two years later, the USACE dredged San Antonio Creek and constructed a training wall just north of the current NAS Alameda site in order to create a canal connecting the Oakland Estuary with the San Leandro Bay. The initial filling of the tidal marshland on the future site of NAS Alameda occurred in 1883 when the South Pacific Coast Railroad constructed a raised track bed along Main Street to the company's new Pier and Ferry Terminal located at the northwestern terminal of the base. By the late 1800s, Alameda Point developed industrially as several refineries, potteries, and shipyards conducted business in the area (Allbrant 2009:2; Page & Turnbull 2005:6, 7, 10, 11).

NAS Alameda

Between 1919 and 1938, the U.S. military consolidated in California as various branches concentrated on training in the use of major new technologies introduced during the early 1900s. Modernization during World War II eventually led to the creation of Army Air Corps fields, armored cavalry training, and Naval Air Stations such as NAS Alameda (Foster Wheeler Environmental Corporation and JRP Historical Consulting Services 2000:1–3).

The NAS Alameda base was designed as a multi-faceted facility to support the Navy in all aspects of maintaining and repairing its heavier-than-air aircrafts. This included seaplanes and landplanes used for operations such as large airplanes for patrols and transport purposes and smaller planes used for aircraft carrier based patrols or air combat. The NAS facility included structures to accommodate seaplanes, landplanes, and carriers, as well as personnel buildings, training areas, and shops. Despite the use of airplane technology during World War I, by 1938, the year that construction on NAS Alameda began, the Navy owned only 1,000 planes. That same year, Congress passed the Vinson Navy Bill authoring funds to bring the number of planes up to 3,000 and construction began on the NAS Alameda facility that spring. During that time, a number of temporary buildings were established and dredging the seaplane lagoon, the turning basin, and the channel to deep water commenced. Permanent buildings were constructed according to plans and development on the base continued throughout World War II. The construction of the main portion of the base was completed by 1945. The expansive scope of development on the base reflected the importance of the NAS Alameda's role in World War II. (Jones & Stokes 2007:2–6, 2-7, 2–9).

Post–NAS Alameda and Alameda Point

Following World War II, NAS Alameda continued military operations over the next few decades and in 1990, the base celebrated its fiftieth anniversary. That same year, Congress enacted the, "Defense Base Closure and Realignment Act of 1990," which established a non-partisan commission to study the list of bases recommended for closure by the Department of Defense. For two more years NAS Alameda continued its standard Naval operations and on March 12, 1993, Defense Secretary Les Aspin recommended NAS Alameda for closure (Jones & Stokes 2007:2–9).

Today, the southeastern side of the island that contained Alameda's former Naval Air Station is presently referred to as Alameda Point. Recent development in the area includes recreational open space in the form bike paths and parks along the shoreline. Residential and municipal development has also taken shape to the east of Alameda Point.

Regulatory Setting

The proposed project is assumed to be subject to Section 106 of the National Historic Preservation Act (NHPA). Because federal funds could be applied to the proposed project, as administered by the Federal Transit Authority (FTA), the proposed project is considered a federal undertaking. The proposed project is also subject to CEQA.

In accordance with the requirements of Section 106 of the NHPA and CEQA, this analysis is based on the documents prepared for preliminary evaluation of architectural resources and identification of archaeological resources of legally significant environmental resources potentially affected by the proposed project:

- *California Register of Historical Resources Evaluation Report for the Alameda Point Pier, Alameda County, California* (ICF Jones & Stokes 2009).
- *Phase I Environmental Site Assessment, the Southeast Corner of W. Hornet Avenue and Ferry Point Road, Alameda, California* (Baseline Environmental 2010).

Applicable findings from both of these documents have been incorporated into this IS/MND.

Thresholds of Significance

The threshold of significance under the NHPA is a resource's eligibility for the NRHP. The threshold of significance under CEQA is generally a resource's eligibility for the California Register of Historical Resources (CRHR) or the NRHP, or listing on a local survey of record, or, in the case of archaeological resources, the resource's qualification as a "unique archaeological resource" (CEQA Section 21083.2). To be eligible for listing on the NRHP/CRHR under Evaluation Criteria A/1, B/2, or C/3, an archaeological site must contain artifact assemblages, features, or stratigraphic relationships associated with important events, or important persons, or exemplary of a type, period, or method of construction (36 CFR 60.4, State CEQA Guidelines Section 15064.5[a](1] and [3] and [c][1] and [2]). To be eligible under Criterion D/4, an archaeological site need only show the potential to yield important information. An archaeological resource that qualifies as a "historical resource" under CEQA or as an historic property under Section 106, generally, qualifies for listing under Criterion "4" of the CRHR (State CEQA Guidelines 15064.5 [a][3][D]). An archaeological resource may qualify for

listing under Criterion D/4 when it can be demonstrated that the resource has the potential to contribute significantly to the study of questions of scientific and/or historical importance.

Archaeological Findings

A records search conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information system (CHRIS) at Sonoma State University did not reveal any previously recorded archaeological resources within the project area or within a half-mile radius of the project area. No archaeological materials were identified during fieldwork in any areas that remain undisturbed.

The field survey resulted in the identification of one built environment (architectural) resource, the Alameda Point Pier. Research indicates the pier is less than 50 years old (built between 1969 and 1973), and thus does not qualify for the NRHP or for the CRHR, and is, therefore, not considered a historical resource for the purposes of the NHPA or CEQA.

Architectural Findings

The tasks carried out to complete the inventory and evaluation of architectural resources within the project area consisted of pre-field research and literature review, and a field survey. The field survey resulted in the identification of one resource, the Alameda Point Pier, which is the remnant marina at the site. Research indicates the pier is less than 50 years old (built between 1969 and 1973), and thus does not qualify for listing in the NRHP or for the CRHR, and is therefore not considered a historical resource for the purposes of the NHPA or CEQA.

Impacts Discussion

a. No architectural resources located in or in vicinity to the project area that meet the criteria of significance under CEQA would be affected by the proposed project. Therefore there is no impact.

b. Because the project site is sited on former marshland and tidal flats, it is unlikely that previously unrecorded archaeological deposits would be discovered during construction of the proposed project. No archaeological artifacts, objects, or sites have been identified within the project's area of potential effects. No unique resources are known to be present that could be affected by the project. Unless discovery of such material is discovered during earth-disturbing activities, the project would have no effect on unique archaeological resources.

   However, there is a remote possibility that project construction could result in exposure of, and impacts on, unknown potentially significant resources. Were this to occur, the disturbance of an archaeological resource during project implementation could be a significant impact if the discovered resource were determined to be an "historical resource," that is, if the resource is eligible for listing on the NRHP or the CRHP. Implementation of Mitigation Measure CR-1 would reduce this potential impact to a less-than-significant level.

Mitigation Measure CR-1: Procedures for Unanticipated Discoveries

Per Section 106 of the NHPA, if artifacts are discovered during excavation activities, WETA shall obtain the review and recommendation of a qualified archaeologist. Recommendations may include evaluation, preservation in place, archaeological test excavation and/or archaeological data recovery, and a draft and final report documenting such activities.

c. No human remains have been identified within the project area as a result of the records search, literature review, or archaeological fieldwork. Because the site was formerly marsh land and tidal land, the site is considered to have a very low potential to encounter human remains. However, construction of the proposed project could result in the identification of human remains associated with unidentified archaeological deposits. According to the California Health and Safety Code (CHSC), 6 or more human burials at one location constitute a cemetery (Sec. 8100), and disturbance of a Native American cemetery is a felony (Sec. 7052). Disturbing human remains, if it were to occur would be a significant impact and would therefore require mitigation. With implementation of Mitigation Measure CR-2, potential impacts on human remains would be less than significant.

Mitigation Measure CR-2: Comply with State Laws Relating to Disposition of Human Remains

The treatment of human remains discovered during excavation activities shall comply with applicable state laws. In the event that human remains are discovered, the County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall be responsible for notifying the NAHC, who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec.5097.98). The archaeological consultant, WETA, and MLD shall make all reasonable efforts to develop an agreement for the dignified treatment of human remains (State CEQA Guidelines. Sec. 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains.

VI. Geology and Soils	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
2. Strong seismic ground shaking?	☐	☐	☒	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
4. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Environmental Setting

Topography

The project site is constructed on engineered fill materials placed over submerged lands or tidal flats west of Alameda Island in the eastern region of the San Francisco Bay basin (Nichols and Wright 1971). The land surface is low lying and nearly flat. Ground surface elevations range from

about 6 feet above mean sea level (msl) at the shoreline to less than 10 feet above msl at the northern boundary of the site (Treadwell & Rollo 2010).

Geology

Regional geologic maps, reports, and other studies indicate that the near-surface geology in the study area is primarily dominated by three geotechnical subunits. These include artificial fill, consisting of recent manmade deposits of loose to medium dense silty sand and clayey sand; younger Bay Mud, consisting of consolidated, soft to stiff clays and silts of Holocene age; and the Merritt Formation, consisting of a loose, fine-grained, well-sorted beach dune sand formation deposited during the late Pleistocene (Rogers and Figuers 1991; Helley and Graymer 1997). The Merritt Formation is underlain by older Bay Mud deposited in late Pleistocene time and older Quaternary alluvial deposits of the San Antonio and Alameda Formations, which lie upon dense Jurassic–Cretaceous-age bedrock of the Franciscan assemblage (Rogers and Figuers 1991).

Based on previous geotechnical investigations performed in the site vicinity, the landside portion of the site is underlain by about 12 to 15 feet of fill consisting of loose to medium dense silty sand and clayey sand, which is in turn underlain by a thin layer of younger Bay Mud. The fill and Bay Mud layers are underlain by medium dense silty sand to depths of about 18 to 30 feet below the ground surface (bgs), with interbedded layers of dense to very dense silty sand and clayey sand extending to the maximum depths previously explored of 60 feet bgs (Treadwell & Rollo 2010).

Offshore subsurface sediments in the waterside portion of the study area consist of a relatively thin layer of younger Bay Mud, extending to a depth of approximately seven feet. This is underlain by medium dense to dense silty sand to the maximum depths previously explored offshore (approximately 9 feet below the mudline) (Treadwell & Rollo 2010).

Soils

Soils within the study area consist mainly of non-native soils developed on fill materials, including soils classified as Urban Land and Xeropsamments, Urban Land consists of heterogeneous fill material that is covered by buildings or roads, while Xeropsamments consists of sandy material dredged from old beach areas. These soils are characterized by high permeability and low shrink-swell characteristics (Welch 1981).

Seismic Hazards

No active faults[7] or potentially active faults[8] have been identified at the project site. Thus, the proposed project is not within any earthquake fault zone designated by the state under the Alquist-Priolo Act (Hart and Bryant 1997). Major active faults include the Hayward Fault located approximately 6 miles northeast of the site, San Andreas Fault located approximately 12 miles west of the site, San Gregorio Fault located 16 miles west of the site, and Calaveras Fault located approximately 16 miles east of the site.

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[7] An active fault is defined as a fault that has shown geologic evidence of movement within Holocene time (approximately the last 11,000 years) (Bryant and Hart 1997).

[8] A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary period (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer (Bryant and Hart 1997).

The project site is located in a seismically active region that is likely to experience earthquake effects during the lifespan of the proposed project. A recent report by the Working Group on California Earthquake Probabilities (WGCEP) indicates that there is a 63% probability that at least one magnitude 6.7 or greater earthquake will occur in the San Francisco Bay region before 2037, and a 31% probability that a M 6.7 or larger earthquake will occur on the Hayward fault in this same time period (USGS and CGS 2008). Due to its proximity and ability to generate large earthquakes, the Hayward Fault dominates the groundshaking hazard at the site; however, other regional faults situated at a greater distance to the site could also contribute to ground shaking risks. In its map titled "Earthquake Hazard Map for Alameda Based on Underlying Geologic Material," the Association of Bay Area Governments (ABAG) predicts that, in the event of a large magnitude earthquake occurring on any of the major regional faults, the amplification of seismic waves in the engineered fill materials at Alameda Point would be subject to extremely high levels of ground shaking (ABAG 1995).

The site is entirely within the designated seismic hazard zone for liquefaction, as shown on the California Geological Survey (CGS) map titled "State of California Seismic Hazard Zones, Oakland West Quadrangle, Official Map," dated February 14, 2003, which was prepared in accordance with the Seismic Hazards Mapping Act of 1990. Significant damage due to liquefaction occurred to the Alameda Naval Air Station as a result of the Loma Prieta earthquake in 1989, causing failure of runway pavements, differential settlement of some buildings, and damage to piers, railroad tracks on piers, and the water and gas distribution system (ABAG 2001).

Impacts Discussion

a.-1. The project site is not within any earthquake fault zones designated by the state under the Alquist-Priolo Act. Accordingly, there is no risk of surface fault rupture at the project site. There would be no impacts related to surface fault rupture.

a.-2. The study area could be exposed to strong groundshaking, potentially resulting in structural damage that could pose risks to human safety. To address the potential adverse effects related to strong groundshaking, design and construction of the proposed project would conform to the EFS in accordance with the CBC, the seismic design requirements for groundshaking specified in the Uniform Building Code (UBC) for Seismic Zone 4, and the adopted City standards for seismic, geologic, and soils hazards, as detailed in Policies 8.1.a through 8.1.l of the Health and Safety Element of the Alameda General Plan. Relevant City policies would require:

- A soils and geologic report evaluating the potential for lateral spreading, liquefaction, differential settlement, and other types of ground failures to be submitted to the City prior to the issuance of all grading and building permits.
- New building designs to resist the lateral effects and other potential forces of a large earthquake on any of the nearby faults, as required by the Uniform Building Code.
- New building designs to incorporate recommendations contained in the soils and geologic report.

With adherence to the applicable codes and design standards, impacts related to strong seismic groundshaking would be less than significant. No mitigation is required.

a.-3. In their preliminary geotechnical evaluation of the project site, Treadwell & Rollo (2010) concluded that loose to medium dense, saturated sand layers underlying the project site may liquefy during a moderate to large earthquake or cause significant lateral ground deformations during a large earthquake. In addition, Treadwell & Rollo concluded that loose to medium dense sand above the groundwater level may densify during strong earthquake shaking, resulting in ground settlement. Due to their plasticity, bay mud deposits can also be highly susceptible to settlement when subjected to large, sustained loads (Goldman 1969). To address potential impacts related to seismic-related ground failure, design and construction of the proposed project would conform to the applicable codes and to the adopted City standards for seismic, geologic, and soils hazards, as detailed in Policies 8.1.a through 8.1.l of the Health and Safety Element of the Alameda General Plan. Relevant City policies would require:

- A soils and geologic report evaluating the potential for lateral spreading, liquefaction, differential settlement, and other types of ground failures to be submitted to the City prior to the issuance of all grading and building permits.
- New building designs to incorporate recommendations contained in the soils and geologic report.
- Structures of three or more stories to be supported on pile foundations that penetrate Bay Mud deposits to firm, non-compressible materials, or other appropriate design.
- Underground utilities to be designed to minimize the effect of differential ground displacements.
- Building entrances, exits, and other vital features to be designed to accommodate differential settlement.
- Inspection, maintenance, and repair of perimeter slopes adjacent to shoreline properties.

With adherence to the applicable codes and design standards, impacts related to lateral spreading, liquefaction, differential settlement, and other types of ground failure are considered less than significant. No mitigation is required.

a.-4. The proposed project is located on relatively flat terrain and, despite the potential for strong groundshaking in the area, would not be susceptible to seismically induced landslides. There would be no impact caused by seismically induced landslides.

b. Surficial soils in the study area have been highly altered from past conditions. As such, ground-disturbing activities such as equipment laydown, site clearing, grading, and excavation would not result in the removal of a high-value topsoil resource. These activities, however, may have the potential to contribute to accelerated erosion, which potentially could impair surface water or groundwater quality in the region. In order to comply with the requirements of applicable permits under the National Pollutant Discharge Elimination System (NPDES) program, the general contractor selected for project implementation would be required to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP would include measures to minimize the potential for accelerated erosion, as discussed in Section IX, *Hydrology and Water Quality* of this IS/MND. Impacts related to a loss of topsoil and the potential for acceleration erosion are expected to be less than significant.

c. Surficial sediments in the study area are composed of loose to medium dense silty sand and clayey sand, which is in turn underlain by a thin layer of younger Bay Mud. Construction and operation of the proposed project on these materials could potentially cause these units to become unstable or

expose the proposed project to adverse effects related to liquefaction, differential settlement, lateral ground spreading, or other types of ground failure. With adherence to the applicable codes and design standards as discussed in the response to checklist item a.-3, this impact is considered less than significant.

d. Soils in the study area are mainly artificial fill and generally have low expansion potential. Impacts related to expansive soil would be less than significant.

e. The proposed project does not propose septic tanks or alternative wastewater disposal systems. There would be no impact.

f. The proposed project is not located in an area containing significant topographical features. To assess the potential paleontological sensitivity of each stratigraphic unit underlying the project site, a review of published literature (including previous environmental documents) was undertaken and was supplemented by an archival search using the University of California Museum of Paleontology (UCMP) fossil locality database (University of California Museum of Paleontology 2010). As documented in the available literature, Merritt Sand and the equivalent Colma Formation have produced significant marine and terrestrial fossils in the past, including many vertebrate fossils and plant remains (Savage 1951; Schlocker 1974). Fossils recovered from the San Antonio Formation have contained the bones of extinct vertebrates, including ground sloth, bison, mammoth, mastodon, horse, camel, and large carnivores (Lawson 1914).

   Based on the UCMP fossil locality search, no known fossil localities occur within or adjacent to the project site. However, 2 vertebrate fossil localities, both Pleistocene in age, exist within 5 miles of the project site. Vertebrate fossils recovered from these sites include bison, short-faced bear, ground sloth, camel, and mammoth. The presence of these fossil sites suggests that similar Pleistocene-aged deposits underlying the study area have the potential to produce additional fossil remains during deep excavations. Based on current design, excavation to an approximate depth of 12 feet and piling to depths of 50–75 feet would be required for construction of the underground fuel vaults and landside building, and piling to depths of 55–85 feet would be required for construction of the marine facilities. Given these excavation depths and considering previous characterizations of near-surface strata in the project vicinity, the project site is considered potentially sensitive for paleontological resources. Disturbance of these resources would be considered a potentially significant impact. Implementation of Mitigation Measure GEO-1 would reduce potential impacts on paleontological resources to a less-than-significant level.

Mitigation Measure GEO-1: Stop Work If Buried Paleontological Resources Are Discovered

If paleontological resources are encountered during project construction, excavation within 50 feet of the suspected resource(s) will be immediately suspended, the City of Alameda (City) will be immediately notified, and a qualified paleontologist will be retained to determine the significance of the find using the criteria set forth in State CEQA Guidelines Section 15064.5. If the find is determined to be significant, the City and project proponent, in consultation with the qualified paleontologist, will seek to avoid damaging effects on the resource whenever feasible. If avoidance is not feasible, the qualified paleontologist will prepare a salvage plan for mitigating the effect of the project on the qualities that make the resource unique. The qualified paleontologist shall complete the plan in accordance with the State CEQA Guidelines and submit it to the City for review and approval.

VII. Greenhouse Gas Emissions	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Setting

Global Climate Change

Global climate change is caused in large part by anthropogenic (man-made) emissions of greenhouse gases (GHGs) released into the atmosphere through the combustion of fossil fuels and by other activities such as deforestation and land-use change. Unlike criteria air pollutants, which are discussed in Section III, *Air Quality*, GHGs tend to persist in the atmosphere where they can trap infrared radiation emitted from the Earth's surface. This phenomenon, known as the *greenhouse effect*, is necessary to keep the Earth's temperature warm enough for successful habitation by humans. Emissions of GHGs in excess of natural ambient concentrations; however, are responsible for the enhancement of the greenhouse effect. This trend of warming of the Earth's natural climate is termed *global warming*.

Greenhouse Gases

The principle GHGs contributing to global warming are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluoridated compounds. Because construction equipment and the operation of maintenance facilities and watercraft primarily generate CO_2, CH_4, N_2O, the following discussion focuses on these pollutants.

CO_2 is the most important anthropogenic GHG, followed by CH_4 and N_2O. It is estimated that CO_2 accounts for more than 75% of all anthropogenic GHG emissions. Three quarters of anthropogenic CO_2 emissions are the result of fossil fuel burning (and to a very small extent, cement production), and approximately one quarter of emissions are the result of land-use change (Intergovernmental Panel on Climate Change 2007a). CH_4 is the second largest contributor of anthropogenic GHG emissions and is the result of growing rice, raising cattle, fuel combustion, and mining coal (National Oceanic and Atmospheric Administration 2005). N_2O, while not as abundant as CO_2 or CH_4, is a powerful GHG. Sources of N_2O include agricultural processes, nylon production, fuel-fired power plants, nitric acid production, and fuel combustion.

In order to simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method to compare GHG emissions is the *global warming potential* (GWP) methodology defined in reference documents from the Intergovernmental Panel on Climate Change (IPCC) (Intergovernmental Panel on Climate Change

1996, 2001). The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2 equivalents (CO_2e), which compares the gas in question to that of the same mass of CO_2 (CO_2 has a GWP of 1 by definition). Refer to Appendix A for a discussion of the GWP for CO_2, CH_4 and N_2O.

Greenhouse Gas Inventories

A GHG inventory is a quantification of all GHG emissions and sinks within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (i.e., for global and national entities) or on a small scale (i.e., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

Table GHG-1 outlines the most recent global, national, statewide, and local GHG inventories to help contextualize the magnitude of potential project-related emissions.

Table GHG-1. Global, National, and State GHG Emissions Inventories

Emissions Inventory	CO_2e (metric tons)
2004 IPCC Global GHG Emissions Inventory	49,000,000,000
2008 EPA National GHG Emissions Inventory	6,956,800,000
2006 ARB State GHG Emissions Inventory	477,700,000
2007 BAAQMD San Francisco Bay Area GHG Emissions Inventory	102,600,000[a]

[a] Approximately 95,500,000 metric tons of CO_2e were emitted within the BAAQMD
Source: IPCC 2007b; U.S. EPA 2010b; ARB 2010; BAAQMD 2008

Climate Change Regulatory Setting

Climate change has only recently been widely recognized as an imminent threat to the global climate, economy, and population. Thus, the climate change regulatory setting—nationally, statewide, and locally—is complex and evolving. The following section identifies key legislation, executive orders, and seminal court cases relevant to the environmental assessment of project GHG emissions.

Federal

On December 7, 2009, the EPA issued its "endangerment" finding, in which the EPA Administrator found that current and projected concentrations of CO_2, CH_4, N_2O, hydroflourocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) threaten the public health and welfare of current and future generations. Additionally, the Administrator found that combined emissions from motor vehicles contribute to the threat of climate change. The EPA recently reconfirmed that "climate science is credible, compelling, and growing stronger" by denying ten petitions challenging the Administrator's 2009 decision.

On February 18, 2010, the Council on Environmental Quality (CEQ) issued a memorandum (Draft Guidance) providing guidance on consideration of the effects of climate change and GHG emissions

under the National Environmental Policy Act (NEPA). The Draft Guidance suggests that the effects of projects directly emitting GHGs in excess of 25,000 tons annually be considered in a qualitative and quantitative manner. The CEQ does not propose this reference as a threshold for determining significance but as "a minimum standard for reporting emissions under the CAA." The Draft Guidance also recommends that the cumulative effects of climate change on the proposed project be evaluated. The Draft Guidance is still undergoing public comments and is not effective until issued in final form (Sutley 2010).

State

A variety of legislation has been enacted in California relating to climate change, much of which sets aggressive goals for GHG reductions within the state.

Executive Order S-3-05 requires the executive branch of the California state government to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050. However, as an Executive Order, it is not binding on local governments or private parties. AB 32 sets the same overall GHG emissions reduction goals as S-3-05 while further mandating that the ARB create a plan that includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." AB 32 applies to all sources in California including local governments and private parties.

In addition to these goals, the State CEQA Guidelines were recently amended to require that lead agencies analyze a project's GHG emissions. The guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds, but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable not withstanding compliance with adopted regulations or requirements" (State CEQA Guidelines Section 15064.4).

Local

The BAAQMD has adopted CEQA significance thresholds for operational GHG emissions from development and stationary source projects. These thresholds are intended to reduce GHG emissions from major contributors. The BAAQMD currently does not recommend a construction GHG emission threshold, but encourages the implementation of BMPs (BAAQMD 2010).

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, an impact pertaining to climate change is considered significant if it would generate a significant amount of GHG emissions, either directly or indirectly; or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHGs. The BAAQMD does not have a significance threshold for construction-related emissions. Instead, the air district recommends implementation of best management practices to reduce GHG emissions.

For operational emissions, the BAAQMD's significance threshold of 1,100 metric tons per year is used to define a "significant amount of GHG emissions" generated from all non-stationary sources (e.g. vessel movement, electricity usage, employee commutes, etc.). The BAAQMD's significance threshold of 25,000 metric tons per year is used to define a "significant amount of GHG emissions"

generated from stationary sources (e.g. fuel pumps).

Impacts Discussion

a. **Construction.** Construction activities would generate short-term CO_2, CH_4, and N_2O emissions from the use of heavy equipment such as cranes, watercraft such as tugboats, and employee commutes. Table GHG-2 presents a summary of construction-related emissions in metric tons per year. It was assumed construction would begin in October 2012 and end in February 2014 (refer to Appendix A for detailed information on emission modeling and quantification methods).

Table GHG-2. Construction GHG Emissions under the Proposed Project (metric tons per year)

	Diesel Equipment			Gas Powered Trips		
Year	**CO_2**	**CH_4**	**N_2O**	**CO_2**	**Other**	**Total CO_2e**
2012	70	0.002	0.009	0	0.000	73
2013	537	0.033	0.014	12	0.638	554
2014	10	0.001	0.000	1	0.068	12
Construction Total	617	0.036	0.023	13	0.706	639

Source: Based on modeling performed by ICF International (URBEMIS2007 Emissions Model; ICF International 2009; U.S. Environmental Protection Agency 2009; California Climate Action Registry 2009)

The proposed project would result in 639 metric tons of CO_2e during construction over three years. These emissions are primarily the result of diesel-powered construction equipment, including onshore equipment and watercraft. As noted above, BAAQMD does not have a construction emissions significance threshold, but encourages the incorporation of best management practices during construction. The annual emissions levels above are less than the operational thresholds of 1,100 metric tons and thus are considered to be less than significant, particularly since they are short term and would cease once construction is complete. Mitigation Measure GHG-1 would help to reduce GHG emissions generated, but is not considered mandatory to reduce this impact to a less than significant level.

Mitigation Measure GHG-1: Implement the BAAQMD's Best Management Practices for GHG Emissions (Optional)

The project applicant will implement, to the extent feasible, the following BMPs mentioned in the BAAQMD CEQA Guidelines:

- Use alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15% of the construction fleet.
- Use local building materials of at least 10%.
- Recycle at least 50% of construction waste or demolition materials.

a. **Operation.** Operational emissions generated by the proposed project can be categorized into two sources: stationary and non-stationary.

The fuel pump is the only stationary source that would operate as part of the proposed project. Table GHG-3 presents emissions associated with the fuel pump and indicates that they would not

exceed the BAAQMD stationary source threshold. Please refer to Appendix A for modeling assumptions and procedures.

Table GHG-3. Summary of Operational GHG Emissions from Stationary Sources (Metric Tons per Year)

Source	CO_2	CH_4	N_2O	Total CO_2e
Fuel Pump	48.49	0.00	0.00	49
BAAQMD Threshold	-	-	-	10,000
Source: Based on Modeling performed by ICF International (URBEMIS2007 Emissions Model)				

GHG emissions from non-stationary sources are primarily generated by employee commute trips and utility usage (i.e. water, electricity, and natural gas consumption). In addition, maintenance dredging, which would occur every 5 to 10 years, would produce sporadic GHG emissions from the operation of a diesel-powered crane and tug. Implementation of the project would also reduce existing ferry movement because vessels that are currently traveling to various existing facilities for maintenance would now travel to the proposed centralized facility. Reductions in the fleet movement would affect GHG emissions generated by the vessel engines. The differences in emissions between the proposed project and existing conditions represent emissions reductions achieved as a result of implementation of the proposed project.

Table GHG-4 presents a summary of GHG emissions generated by non-stationary sources under the proposed project. Because maintenance dredging would be conducted every 5 to 10 years, the emissions presented below represent the maximum annual emissions that would be generated during those years when channel maintenance occurs. Refer to Appendix A for modeling assumptions and procedures.

Table GHG-4. Summary of Operational GHG Emissions from Non-Stationary Sources (Metric Tons per Year)

Source	CO_2	CH_4	N_2O	Total CO_2e
Utilities[a]	379	0.08	0.01	385
Channel Maintenance	2	0.00	0.00	2
Vehicle Travel[b]	173	9.11[c]		182
Vessel Movement[d]	-166	0.00	-0.02	-173
Total GHG Emissions	388	9.18		396
BAAQMD Threshold	-	-	-	*1,100*

[a] Includes electricity, wastewater, water, and natural gas

[b] Includes employee commute and fuel truck deliveries

[c] Emissions of CH_4, N_2O, and other GHGs were calculated as a lump sum percentage of CO_2 emissions and are not presented individually.

[d] Represents the difference in emission between existing conditions and the proposed project.

Source: Based on modeling performed by ICF International (URBEMIS2007 Emissions Model; ICF International 2009; U.S. Environmental Protection Agency 2009; California Climate Action Registry 2009; alameda Municipal Power 2010; California Air Resources Board 2008; Department of Water Resources 2007; California Air Resources Board 2010; Gougherty pers. Comm.)

The proposed project would result in a maximum of 396 metric tons of CO_2e per year from non-stationary sources. This quantity is well below the BAAQMD significance threshold.

Table GHG-5 presents a summary of construction and operational related GHG emissions.

Table GHG-5. Summary of Construction and Operational Related GHG Emissions (Metric Tons per Year)

Year	Activity		CO_2	CH_4	N_2O	Total CO_2e
2012	Construction	Diesel Equipment	70	0.002	0.009	73
		Gasoline Equipment	0	0.000[a]		
2012 Total			*70*	*0.011[a]*		*73*
2013	Construction	Diesel Equipment	537	0.033	0.014	554
		Gasoline Equipment	12	0.638[a]		
2013 Total[b]			*537*	*0.684[a]*		*554*
2014	Construction	Diesel Equipment	10	0.001	0.000	12
		Gasoline Equipment	1	0.068[a]		
	Operations	Stationary Source	48	0.000	0.000	445
		Non Stationary Sources	388	9.180[a]		
2014 Total[b]			*448*	*9.249[a]*		*457*
2014+	Operations	Stationary Source	48	0.000	0.000	445
		Non Stationary Sources	388	9.180[a]		
2014 to end of project lifetime			*436*	*9.180[a]*		*445*

[a] Emissions of CH_4, N_2O, and other GHGs were calculated as a lump-sum percentage of CO_2 emissions and are not presented individually.

[b] If the facility begins operation in 2013, a portion of the total operational emissions may be emitted during this year.

Source: Based on modeling performed by ICF International (URBEMIS2007 Emissions Model, ICF International 2009, U.S. Environmental Protection Agency 2009; California Climate Action Registry 2009; Alameda Municipal Power 2010; California Air Resources Board 2008; Department of Water Resources 2007; California Air Resources Board 2010; Gougherty pers. comm.)

As shown in Table 4, project level construction emissions generated during 2012 and 2013 are expected to result in 73 and 554 metric tons of GHGs, respectively. These emissions would be short term and partially reduced through implementation of Mitigation Measure GHG-1. Likewise, the 12 metric tons generated during construction in 2014 will be short term and mediated by Mitigation Measure GHG-1. The 445 metric tons generated throughout the project lifetime from operational emissions represent approximately 0.00043% of the San Francisco Bay Area's GHG emissions in 2007 (see Table GHG-1), and are equivalent to adding approximately 296 typical cars to the road (U.S. EPA 2010b). Moreover, these emissions would not exceed the BAAQMD's GHG significance thresholds. This impact is considered less than significant.

b. AB 32, mandates statewide reduction of GHG emissions to 1990 levels by 2020. As described above, implementation of the proposed project would generate a less-than-significant level of GHG emissions. In addition, Mitigation Measures GHG-1 (if implemented) would help to reduce further GHG emissions generated. Therefore, project-generated GHG emissions would not conflict with the goals of AB 32 or any preceding state policies adopted to reduce GHG emissions. This impact is considered less than significant.

VIII. Hazards and Hazardous Materials	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Environmental Setting

The discussion of potential impacts associated with hazards and hazardous materials in the study area is based on information obtained from the Phase I Environmental Site Assessment (ESA) completed for the proposed project by BASELINE Environmental Consultants in January 2010 (BASELINE 2010) (Appendix C). The ESA included a review of historical land use information, including historical topographic maps and aerial photographs; a reconnaissance of the project site; and a review of environmental records from federal, state, and local sources.

The project site is within the NAS BRAC area now known as Alameda Point. The project site is owned by the City of Alameda and was leased to the United States Navy as part of the NAS, which was closed in 1997. Prior to 1942, the project site was open water of the San Francisco Bay and between 1942 and 1946 the project site was filled, mostly with dredge spoils. Past historical uses at the site consisted of a snack-shop and boat house (Building 385) and a small craft marina on the waterside portion of the project site; a restaurant and maintenance building for the recreational marina was located on the adjacent parcel to the east. A hazardous materials storage locker was located in the eastern portion of the landside area of the project site.

The NAS was closed in 1997 and the Navy's lease of the property expired, returning control of the property to the City of Alameda. Land uses associated with hazardous materials use (i.e., the railroad tracks, hazardous materials storage locker, and the building housing marina maintenance activities) were identified by the Navy as part of the base closure activities. The project site was determined by the Navy to not warrant remedial actions to protect human health or environment (BASELINE 2010). In 2006 and/or early 2007 the project site was cleared of aboveground structures, and subsurface utilities (such as sanitary sewer connections) were sealed. The Navy removed all fuel lines associated with the basewide fuel distribution systems on the site.

Past Environmental Investigations and Observations

In 2003, a BRAC Cleanup Plan was prepared by Tetra Tech EM Inc. for the Navy (Tetra Tech 2003). The Environmental Baseline Survey (EBS), which was prepared as part of the closure proceedings for the NAS by the Navy, divided NAS into smaller parcels classified as Installation Restoration (IR) sites, and further organized into a total of 10 Operable Units (OU) based on geographical proximity and environmental characterization. The project site is partly within IR Site 24 and small portions of EBS Parcels 160A, 162, and the majority of 198. The Navy conducted parcel-specific environmental investigations as well as basewide investigations. Relevant findings as they relate to the proposed project site are described below.

- Radiological Issues: A basewide Historical Radiological Assessment (HRA) was prepared by the Navy in 2000. The HRA concluded that no significant radioactivity has accumulated in the marine environment based on water, sediment, and biota sampling (BASELINE 2010; HRA 2000).
- EBS Parcel 198: A Parcel Evaluation Plan (PEP) was prepared to investigate and document existing environmental conditions at EBS Parcel 198. The PEP noted that pesticides had been used inside Building 385 (during 1992 and 1993) and that petroleum products had been stored in the boat maintenance portion of the building continuously since its construction. There were no documented spills at this location and no lead-based paint issues identified for Building 385. No polychlorinated biphenyl (PCB) issues were identified for Parcel 198. Asbestos containing-materials were identified as insulation on piles and fitting in Building 385 (BASELINE 2010; IT 2001).
- EBS Parcel 162: The landside eastern portion of the project site was part of EBS Parcel 162. The PEP for EBS Parcel 162 noted that chemicals were stored in a hazardous materials locker and reported to be marina supplies including non-halogenated solvents, paints, and petroleum products. The total volume of materials stored was estimated to be less than 75 gallons. Soil samples were collected in 1995 in response to the visual presence of ground staining. No conclusions or recommendations regarding remediation were made. However, the report

concluded that no additional sampling was recommended for EBS Parcel 162 (BASELINE 2010; IT 1997).

- EBS Parcel 160A: A small portion of the northern edge of the landside of the project site lies within EBS Parcel 160A. Historical use of EBS 160 was characterized as aircraft parking and no chemical storage, spills, or staining were noted. Potential impact to soil or groundwater was characterized as unlikely and the Navy recommended that no further evaluation was warranted for EBS Parcel 160A.
- IR Site 24: Results of environmental investigations of IR Site 24 performed by the Navy indicated that the highest concentrations of contaminants were in the northeastern corner of IR Site 24, approximately 1,000 feet north of the project site (BASELINE 2010; DTSC 2009). The Navy prepared a plan for implementation of a remedial action for IR Site 24 for the contaminated sediment portions; the remainder of IR Site 24, including the landside and waterside portions of the project site required no further action, and no land-use restrictions, environmental monitoring, or other cleanup actions were recommended (BASELINE 2010; Navy 2009).
- Stormdrain: Outfall M underlies the site and discharges stormwater directly into the San Francisco Bay. Sediment cores were collected during 2005 or 2006 from the waterside portion of IR Site 24 to characterize potential sediment contaminants. Total polycyclic aromatic hydrocarbons (PAH), pesticides, total PCB, and metal concentrations did not exceed the effects range-median[9] values established as threshold for ecological impact for the former base (BASELINE 2010; Bechtel 2008).
- Breakwater Beach Area Risk Evaluation: An ecological and human health risk evaluation was conducted for the Breakwater Beach area, which includes the waterside portion of the project site. The study concluded that no unacceptable risks were identified for any of the ecological receptors, and human health risks were all determined to be consistent with ambient conditions. Based on this information, no remedial action was recommended for the Breakwater Beach area (BASELINE 2010; Battelle 2007).

Environmental Database Review

As part of the ESA, BASELINE contracted Environmental Data Resources, Inc. (EDR) to conduct a search of environmental records from federal, state, and local databases pertaining to past and present hazardous materials uses and releases on properties at or near the project site (EDR 2009). Two sites of current facilities associated with hazardous materials use were identified within 0.25 mile of the project site:

1. Delta Sandblasting Company, Inc., located approximately 0.25 mile northeast of the landside portion of the project site. No hazardous materials violations at this location were noted in the database and the site was determined unlikely to affect the project site (BASELINE 2010).
2. National Response Corporation Environmental Services (NRC), which performed activities related to cleanup of NAS facilities, is listed as a handler of hazardous waste and a conditionally exempt small quantity generator. No violations were listed related to NRC activities and the site was determined unlikely to affect the project site (BASELINE 2010).

[9] EPA definition: The concentration of a contaminant above which harmful effects always or almost always occur.

A supplemental inquiry of the EDR databases indicated approximately 200 entries from various sources related to historic NAS activities. However, the project site was not specifically identified in any of the searched databases associated with the storage, generation, or disposal of hazardous materials.

Site Reconnaissance

Observations made during BASELINE's reconnaissance identified no current use of the project site, or land uses on adjoining properties that indicated current use of hazardous materials. No evidence of hazardous materials release was observed at the project site and adjoining properties (BASELINE 2010).

Regulatory Setting

Federal

Hazardous Materials Worker Safety Requirements

The federal Occupational Safety and Health Administration (Fed-OSHA) and the California Occupational Safety and Health Administration (Cal-OSHA) are the agencies responsible for assuring worker safety in the handling and use of hazardous materials in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations, as authorized in the Occupational Safety and Health Act of 1970. The regulations provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. Refer to Cal-OSHA requirements below.

State

Hazardous Materials Worker Safety Requirements

In California, Cal-OSHA assumes primary responsibility for developing and enforcing workplace safety regulations; Cal-OSHA standards are generally more stringent than federal regulations. The state regulations concerning the use of hazardous materials in the workplace are included in Title 8 of the California Code of Regulations (CCR), which contains requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information relating to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees.

Hazardous Waste Control Act

The Hazardous Waste Control Act (HWCA) created the State Hazardous Waste Management Program, which is similar to, but more stringent than, the federal Resource Conservation and Recovery Act (RCRA). The HWCA is implemented by regulations contained in Title 26 of the CCR,

which describes requirements for the proper management of hazardous wastes, including criteria for:

- Identification and classification.
- Generation and transportation.
- Design and permitting of recycling, treatment, storage, and disposal facilities.
- Treatment standards.
- Operation of facilities and staff training.
- Closure of facilities and liability requirements.

These regulations list more than 800 potentially hazardous materials and establish criteria for identifying, packaging, and disposing of such wastes. Under the HWCA and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substance Control (DTSC).

Transportation of Hazardous Materials

California requires all hazardous waste transporters to register with the DTSC. Unless specifically exempt, hazardous waste transporters must comply with the California Highway Patrol Regulations, the California State Fire Marshal, and the United State Department of Transportation Regulations. Additionally, hazardous waste transporters must comply with Division 20, Chapter 6.5, Article 6 and 13 of the California Health and Safety Code and the Title 22, Division 4.5, Chapter 13, of the CCR, which are administered by DTSC.

Certified Unified Program Agency

In accordance with Chapter 6.11 of the California Health and Safety Code (Section 25404, *et seq*.), local regulatory agencies enforce many federal and state regulatory programs through the Certified Unified Program Agency (CUPA) program, including:

- Hazardous materials business plans (Chapter 6.95 of the Health and Safety Code Section 25501 et seq.).
- The California accidental release prevention program for acutely hazardous materials (Chapter 6.95 of the Health and Safety Code Section 25531 et seq.).
- State Uniform Fire Code requirements (Section 80.103 of the Uniform Fire Code as adopted by the state fire marshal pursuant to Health and Safety Code Section 13143.9).
- Underground storage tanks (Chapter 6.7 of the Health and Safety Code Section 25280 et seq.).
- Aboveground storage tanks (Health and Safety Code Section 25270.5[c]).
- Hazardous waste generator requirements (Chapter 6.5 of the Health and Safety Code Section 25100 et seq.).

Hazardous Materials Business Plans

Businesses that handle specified quantities of chemicals are required to submit a hazardous materials business plan (HMBP) in accordance with community right-to-know laws. This plan allows

local agencies to plan appropriately for a chemical release, fire, or other incident. The HMBP must include the following:

- An inventory of hazardous materials with specific quantity data, storage or containment descriptions, ingredients of mixtures, and physical and health hazard information.
- Site and facility layouts that must be coded for chemical storage areas and other facility safety information.
- Emergency response procedures for a release or threatened release of hazardous materials.
- Procedures for immediate notification of releases to the administering agency.
- Evacuation plans and procedures for the facility.
- Descriptions of employee training in evacuation and safety procedures in the event of a release or threatened release of hazardous materials consistent with employee responsibilities, and proof of implementing such training on an annual basis.
- Identification of local emergency medical assistance appropriate for potential hazardous materials incidents.

The HMBP is filed with and administered by the CUPA agency, which ensures review by and distribution to other potentially affected agencies. The proposed project would handle hazardous material quantities greater than 55 gallons and would be required to submit an HMBP. Plans must be prepared prior to facility operation and are reviewed/updated biennially (or within 30 days of a change in storage conditions at the site).

California Accidental Release Program

The California Accidental Release Program (CalARP) includes regulatory requirements for facilities that handle regulated substances above threshold quantities to prepare a risk management plan (RMP). The proposed project would not store regulated substances at levels above the thresholds set forth by the CalARP. As a result, a RMP is not required.

Local

City of Alameda Hazardous Materials Maintenance Plan

In accordance with 2007 California Fire Code, Chapter 27, a permit must be filed with the City of Alameda Fire Department when storing hazardous materials. The permit includes preparation of a Hazardous Materials Maintenance Plan (HMMP), which specifies the location of emergency equipment and lists hazardous materials and quantities, including wastes. The HMMP describes the personnel, procedures, and equipment available for responding to a release or threatened release of hazardous materials that are stored or handled onsite. The HMBP is a separate plan provided to the County and cannot be used in place of the HMMP.

Impacts Discussion

a. **Construction**. Construction activities would include the routine use, transport, and disposal of hazardous materials, including fuels, oils, chemicals, and other materials. Improper transportation,

use, storage, and disposal of these materials could result in exposure of construction workers or the public to these hazardous materials. In accordance with the contractor's specifications, these construction-related hazardous materials would be transported, stored, and handled in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the U.S. Department of Transportation. In addition, WETA would require the contractor selected for project implementation to adhere to procedures to ensure that water quality is protected during construction, as specified in the project SWPPP provisions (see Section IX, *Hydrology and Water Quality,* Mitigation Measure HYD-1). The BMPs listed in the SWPPP would include provisions for appropriate handling of hazardous materials used on the project sites. With these plans and procedures in place, and with implementation of Mitigation Measure HYD-1, potential construction impacts related to routine hazardous materials use, transport, storage, or disposal at the project site are expected to be less than significant.

a. **Operation**. Operation of the proposed project would involve the routine transport of commercial fuel tanker trucks delivering between 30,000 and 40,000 gallons of fuel every 14 to 21 days, and between 1,000 and 2,000 gallons of lube oil and 5,000 gallons of urea delivered monthly to the project site. Waste oil would be collected monthly. As described in Chapter 2, *Project Description*, the site would be configured to allow fuel to be discharged to the onsite storage tanks by gravity flow in a secure and spill-contained area. The grating system and fuel supply would be weather protected by a sloped canopy or other rainfall isolating system. Fuel would be delivered from the storage tank to the vessels by fuel transfer pumps that would be valved and piped to a hose reel at the refueling berths. WETA would be responsible for the proper storage and disposal of petroleum and hazardous materials or wastes in accordance with all local, state, and federal laws and regulations. The SPCC Plan would describe transport, storage, and disposal procedures; site housekeeping practices, and monitoring and spill response protocols. Compliance with existing regulations and implementation of the SPCC Plan would reduce potential impacts to a less-than-significant level.

   Dredging to construct the proposed facilities as well as operational maintenance dredging (approximately once every 5 to 10 years) would be required as part of the proposed project. Any dredging (or removal of piers) could result in requirements for special handling of generated wastes. Given the historical uses (e.g., hazardous materials storage locker, rail corridor, and marina maintenance facility) at the project site, grading the landside portion could also generate hazardous materials requiring transport and disposal. As specified in Chapter 2, *Project Description*, the proposed project would prepare a soil sampling program to assess potential effects to human health (including future users and construction workers) and the environment. Depending on the results of the investigation, additional sampling may be necessary to determine potential impacts on underlying groundwater (see Section IX, *Hydrology and Water Quality*). Any sampling and disposal of dredged material would be in accordance with USACE Dredged Materials Management Office (DMMO) requirements. Because the proposed project would prepare a soil sampling program and be required to comply with existing regulations, potential impacts associated with the transport and disposal of dredged material would be less than significant.

b. **Construction**. Construction of the proposed project would require the use of petroleum and hazardous materials (i.e., fuels, oil, and other materials) for the operation of heavy equipment. Improper equipment use or accident conditions could result in incidental releases or spills, potentially posing health risks to workers, the public, and the environment. Construction impacts would be reduced to a less-than-significant level with Mitigation Measure HAZ-1 described below.

b. **Operation.** Operation of the proposed project could also result in accidental release of fuel into the San Francisco Bay. Potential impacts associated with incidental releases or spills would be reduced through implementation of the SPCC, which would describe transport, storage, and disposal procedures; construction site housekeeping practices, and monitoring and spill response protocols. Compliance with existing regulations and implementation of the SPCC would ensure that the risks to the public and the environment from an accidental release of petroleum or other hazardous during operations materials would be less than significant.

Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Spill Prevention Control and Countermeasure Plan during Construction

As part of compliance with the NPDES General Construction Permit, a Hazardous Material Spill Prevention Control and Countermeasure Plan will be prepared for the use of construction equipment for the proposed Project and will minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the Project. This plan will describe storage procedures and construction site housekeeping practices and identify the parties responsible for monitoring and spill response. The measures and monitoring procedures required under the General Construction Permit will minimize the potential for the release of hazardous materials to the environment. WETA will review and approve the Hazardous Materials Spill Prevention Control and Countermeasure Plan before allowing construction to begin. WETA will routinely inspect active portions of the project area to verify that the BMPs specified in the plan are properly implemented and maintained, and will immediately notify the contractor if there is a noncompliance issue that will require compliance.

The federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110) is any oil spill that: (1) violates applicable water quality standards; (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline; or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the contractor's superintendent will immediately notify the Alameda County Department of Environmental Health and the DTSC, which have spill response and cleanup ordinances to govern emergency spill response. A written description of reportable releases will be submitted to the San Francisco Regional Water Quality Control Board (RWQCB). This submittal will include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.

If a reportable spill has occurred, and results determine that project activities have adversely affected surface or groundwater quality in excess of water quality standards, a detailed analysis shall be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to ASTM standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, WETA and its contractors will select and implement measures to control contamination, with a performance standard that water quality will be returned to baseline conditions. These measures will be subject to approval by the Alameda County Department of Environmental Health and DTSC.

c. Encinal High School and Paden Elementary School are located approximately 2,700 feet (0.5 mile) and 4,200 feet (0.8 mile) east of the project site. However, Hornet Field, which is part of Encinal High

School is located roughly 1,000 feet (0.19 mile) east of the project site. Petroleum and hazardous materials would be handled and disposed of during construction and operation of the proposed project. As stated in the responses to checklist items a. and b., a Hazardous Materials Spill Prevention Control and Countermeasure Plan would be prepared for construction and the SPCC Plan for operations to ensure the protection of public health and the environment from the use of petroleum and hazardous substances at the proposed WETA facility. WETA and its contractor would also be required to comply with all applicable local, state, and federal regulations. Therefore, potential impacts associated with hazardous materials exposure for users of Hornet Field would be less than significant.

d. The project site is located within the NAS BRAC area and is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. A BRAC Cleanup Plan was prepared in 2003 and environmental investigations have been conducted at the project site required as part of Navy assessments of the environmental conditions of the NAS. The project site was determined by the Navy to not warrant remedial actions to protect human health or the environment. Given the historical land uses associated with the NAS, the proposed project includes preparation of a soil sampling program to assess potential effects to human health (including future users and construction workers) and the environment. Depending on the results of the investigation, additional sampling and further remedial action may be necessary. However, any sampling and disposal of hazardous excavated or dredged material would be in accordance with local, state, and federal requirements. Because a soil sampling program would be prepared and the proposed project would be required to comply with existing regulations, potential impacts would be less than significant.

e., f. The project site is located in what was formerly the NAS, which was closed in 1997. No public airports, active airport land, or private airstrips are located within two miles of the project site. There would be no impact.

g. In 2008, the City of Alameda prepared a Comprehensive Emergency Management Plan (CEMP). The plan provides a framework for coordination of response and recovery efforts within the City in coordination with local, state, and federal agencies (City of Alameda 2008). The proposed project would serve as the central San Francisco Bay base for WETA's ferry fleet, and could serve as an emergency operations center, serving passengers and sustaining water transit service for emergency response and recovery. Therefore, the proposed project would not impair implementation of or physically interfere with Alameda's CEMP. There would be no impact.

h. The project site is not designated as a Very High Fire Hazard Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection (CAL FIRE) per Government Code 51175-89. However, the use of construction equipment and onsite storage of petroleum hydrocarbons could pose a fire risk. Potential sources of ignition include equipment with internal combustion engines, gasoline-powered tools, and any other equipment or tools that produce a spark, fire, or flame. Other fire hazards could result from poor maintenance of equipment or smoking onsite by construction personnel or WETA employees. Because the proposed project would be located within a developed industrial area with minimal vegetative fuel, there would be no wildland fire risk. The City of Alameda requires all construction contractors to meet fire safety regulations primarily through compliance with the provisions of the Building Code and Fire Code. Furthermore, construction and operational activities are subject to compliance with the requirements of the State Uniform Fire Code. Through adherence to these requirements, impacts related to fires would be less than significant.

IX. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	☐	☒	☐	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	☐	☒	☐	☐
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f. Otherwise substantially degrade water quality?	☐	☒	☐	☐
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	☐	☐	☒	☐
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☒	☐	☐
j. Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Environmental Setting

Surface Water

The only major surface water feature is the San Francisco Bay. There are no freshwater water bodies in the vicinity of the project. A portion of the project (overwater coverage of approximately 20,000 square feet) is located within the San Francisco Bay.

The water quality of the San Francisco Bay is typical of urban runoff, and may possess elevated hydrocarbons and household pesticides. The Clean Water Act (CWA) Section 303(d) List compiles lists of impaired waterways. The central San Francisco Bay is listed as impaired for mercury, selenium, exotic species, chlorodane, DDT, dieldrin, dioxin compounds (2, 3, 7, 8 TCDD), furan compounds, PAHs, and PCBs (SWRCB 2006).

Ground Water

Prior to human development, the quality of shallow groundwater at Alameda Island was of excellent quality. Groundwater was recharged only by rainfall; no other sources contributed to the shallow aquifer. Historic accounts of water obtained from wells drilled in the Merritt Sand on Alameda Island in the mid- to late-1800s describe the water as the "sweetest" in the area. Overpumping of these wells resulted in salt water intrusion and closure of most of the wells by the turn of the century. Only minor pumping of groundwater from the aquifer underlying Alameda Island has occurred since 1900 (LSA Associates 2002).

Shallow groundwater occurs at the site at depths ranging around 4 to 8 feet below the ground surface (bgs) in fill materials and Bay Mud. This shallow water-bearing zone is not considered a regionally extensive aquifer. Bay Mud underlies the fill to a maximum identified depth of 95 feet bgs. The two main aquifers underlying the site occur in the Merritt/Posey Sand and the Alameda Formation. These aquifers are separated by fine-grained, low permeability sediments referred to as the San Antonio aquitard. The depth to the top of the Alameda Aquifer, which is largely recharged by rainfall in the Oakland Hills, ranges from 100 to 200 feet bgs. Based on its vulnerability to contaminants, low yield to wells, high total dissolved solids (TDS) levels, and likely land subsidence which may occur with extraction, the US Navy has concluded that the shallow groundwater has no designated beneficial uses. Groundwater extraction from the shallowest water bearing zone at Alameda Point is restricted as a condition of the City's lease with the US Navy. Upon transfer of the property to the City, the City expects to enact a deed restriction that prohibits the extraction of groundwater from the shallowest groundwater zone (similar to the Covenant to Restrict Use of Property for the FISC property, which restricts use of shallow groundwater) (LSA Associates 2002).

There are numerous water supply wells on the island of Alameda, including two wells at Alameda Point. These wells generally supply water for irrigation and, to a lesser extent, for industrial uses. On Alameda Point, a well near the Officers Club is currently used for irrigation and a well near the Pan Am Building is believed to be capped. While most of the water supply wells on Alameda draw water from the permeable zones within the deeper San Antonio and Alameda Formations, some also may draw water from the shallower Merritt/Posey Formation (LSA Associates 2002).

Flooding

The Federal Emergency Management Agency (FEMA) delineates floodplains for the nation and presents the flood zones on Flood Insurance Rate Maps (FIRMs). According to the FIRM (06001C0068G), the landside portion of the project site is located in Zone X, which is determined to be outside of the 100-year flood event. The marine portion of the project site is located in Zone VE, which is considered a special flood hazard area subject to inundation of the 100-year flood event with additional hazards due to storm-induced velocity wave action (FEMA 2009).

Extreme high tides in the San Francisco Bay result from the combined effects of astronomical high tides (related to the lunar cycle) and other factors including winds, barometric pressure, ocean temperatures, and freshwater runoff. In California, the highest astronomical tides occur in the summer and winter, and therefore extreme high tides occur during these times. The highest tide ever recorded in the San Francisco Bay (between 1855 and 1983) occurred on December 3, 1983 (tide elevation of 6.0 feet above National Geodetic Vertical Datum [NGVD]). Based on the 129-year record of daily high tide, the USACE has developed an estimated 100- year high tide elevation for various locations within the Bay (USACE 1984). The elevation of the adopted 100-year tide at Alameda Point is approximately 6.6 feet above NGVD. The USACE indicates that northern Alameda County (including Alameda Point) is not threatened by significant tidal flooding problems to warrant further evaluation of tidal flood control projects (LSA Associates 2002).

Sea Level Rise

Tidal gauge measurements collected over the last 100 years indicate that sea level is rising relative to the land surface in many locations throughout the world. It is widely believed that sea levels will continue to rise in response to global warming. Global warming causes thermal expansion of the upper layers of the ocean (increasing the volume of water) and melting of the earth's glaciers and polar ice fields. Such increases in sea level, if sustained over long periods of time, could create flooding problems (or exacerbate existing problems) for those areas currently protected from flooding with only minimal freeboard.

To plan for, and mitigate, potential flooding problems associated with sea level rise, it is important to be able to quantify the amount of sea level rise expected at a specific location over a given time period. The 2009 Study, *The Impacts of Sea-Level Rise on the California Coast* (Pacific Institute 2009), indicates that sea level rise in San Francisco Bay could reach up to 1.6 feet (0.5 meter) by 2050 and up to 4.6 feet (1.4 meters) by 2100.

Tsunami Potential

A tsunami is a sea wave produced by an offshore earthquake, volcanic eruption, or landslide. Tsunamis are difficult to observe in the open ocean because they have relatively low wave heights (typically less than 10 feet) and travel very fast (up to 500 miles per hour). Tsunamis can be exceedingly destructive upon reaching exposed coastlines, where they are capable of rising to 100 feet in height and moving at 30 miles per hour. The San Francisco Bay, and its tidally influenced tributaries, are partially protected from inundation and damage associated with tsunamis because of the restricted hydraulic access at the Golden Gate. The predicted wave run-up in the bay adjacent to Alameda Point has been estimated to range from 4.7 to 5.5 feet above mean sea level for the 100-year tsunami (LSA Associates 2002).

Regulatory Setting

Federal Regulations

Clean Water Act

The CWA, as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Applicable sections of the federal CWA (33 USC 1251–1376) include:

- Sections 303 and 304, providing water quality standards, criteria, and guidelines.
- Section 401, requiring an applicant for any federal permit that proposes an activity that might result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of CWA. Certification is provided by the RWQCB.
- Section 402, establishing the NPDES, a permitting system for the discharge of pollutants (except for dredged or fill material) into waters of the United States. This permit program is administered by the RWQCB.
- Section 404, establishing a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is administered by the USACE.

Federal Flood Insurance Program

Congress, alarmed by increasing costs of disaster relief, passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts is to reduce the need for large publicly funded flood control structures and disaster relief by restricting development on floodplains.

FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues FIRMs for communities participating in the National Flood Insurance Program. These maps delineate flood hazard zones in the community.

Oil Pollution Act

The Oil Pollution Act (OPA) of 1990 is the principal statute governing oil spills in the nation's waterways and establishes liability and limitations on liability for damages resulting from oil pollution. OPA mandates a *National Oil Hazardous Substances Pollution Contingency Plan* to provide an organizational structure and procedures for preparing for an responding to releases of hazardous substances, pollutants, and contaminants. OPA requires preparation of a spill prevention and response plan by coastal facilities and vessels.

Oil Pollution Prevention Rule

The Environmental Protection Agency's Oil Pollution Prevention Rule became effective January 10, 1974. It was published under the authority of Section 311(j)(1)(C) of the Federal Water Pollution Control Act (CWA). The regulation may be found at Title 40, Code of Federal Regulations, Part 112 (40 CFR 112). The prevention rule was revised on July 17, 2002. Facilities subject to the rule must

prepare and implement a plan to prevent any discharge of oil into or upon navigable waters of the United States or ad-joining shorelines. The plan is called a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan). As noted in the project description a SPCC Plan will be prepared for the project due to the storage of diesel fuel at the proposed facility and the location along the shoreline.

The Ports and Waterways Safety Act

The Ports and Waterways Safety Act of 1972 provides the authority for the U.S. Coast Guard to increase vessel safety and protect the marine environment in ports, harbors, waterfront areas, and navigable waters. The Act provides regulatory authority to improve the supervision and control of all types of vessels operating in U.S. navigable waters and in the safety of vessels that transport or transfer oil or hazardous cargoes.

State Regulations

Porter-Cologne Water Quality Act

California's Porter-Cologne Water Quality Control Act (California Water Code, Section 13000 et seq.) provides the basis for water quality regulation in California. The act requires a "Report of Waste Discharge" for discharge of waste (liquid, solid, or otherwise) to land or surface waters that might impair a beneficial use of surface or groundwater of the state. Based on the report, the RWQCBs issue waste discharge requirements to minimize the effect of the discharge.

Effective July 1, 2010, discharges will be required to obtain coverage under a new NPDES Construction General Permit that was adopted in September of 2009. The new permit covers stormwater discharges similar to those covered by the previous permit, but adds tiered approaches to managing stormwater runoff.

Oil Spill Prevention and Response Act

California enacted the Oil Spill Prevention and Response Act in 1990. The Act established the Office of Oil Spill Prevention and Response in the CDFG, which is authorized to direct spill response, cleanup, and natural resource damage assessment activities, as well as regulate all private vessels over 300 gross tons (672,000 pounds) that enter California ports.

Executive Order S-13-08

Executive Order S-13-08 requires all state agencies to consider a range of sea level rise scenarios for the years 2050 to 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level. However, projects that are programmed for construction funding or that file a Notice Of Preparation prior to November 14, 2013 are not subject to this requirement.

Local Regulations

San Francisco Regional Water Quality Control Board—Basin Plan

Water quality in streams and aquifers of the region is guided and regulated by the San Francisco RWQCB Basin Plan (Basin Plan) (RWQCB 2007). State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state. The Basin Plan identifies beneficial uses of waters, establishes quantitative and qualitative objectives for protection of beneficial uses, and sets forth policies to guide the implementation of programs to attain the objectives. Existing beneficial uses of the Bay include industrial service supply; industrial process supply; ocean, commercial, and sport fishing; shellfish harvesting; estuarine habitat; fish migration; preservation of rare and endangered species; fish spawning; wildlife habitat; water contact recreation; noncontact water recreation; and navigation.

San Francisco Regional Water Quality Control Board—Provision C.3

In February 2003, the San Francisco RWQCB added Provision C.3 to the NPDES MS4 permit program. Implementation of the new provision began in 2004 and requires developers to detain storm runoff from project sites so that peak flows and flow durations match pre-project conditions. In addition, projects must incorporate measures to prevent pollutants from entering runoff.

Impacts Discussion

a, f. **Construction.** Construction activities such as grading, trenching, and dredging would disturb sediment and soil and temporarily increase turbidity in the marine zone of the San Francisco Bay. Excessive sediment can cause increased turbidity and reduced light penetration, reducing prey capture for sight-feeding predators, reducing the light available for photosynthesis, clogging the gills and filter mechanisms of fish and aquatic invertebrates, reducing spawning and juvenile fish survival, smothering bottom-dwelling organisms, changing substrate composition, and reducing aesthetic values. Concentrations of nutrients and other pollutants (such as metals and certain pesticides) associated with sediment particles could also increase. Although these effects are usually short term and greatly diminish after revegetation of exposed areas, sediment and sediment-borne pollutants may be remobilized under suitable hydrologic and hydraulic conditions.

Other pollutants of concern include toxic chemicals from heavy equipment or construction related materials (e.g., gasoline, oils, grease, solvents, lubricants, and other petroleum products). Concrete, soap, trash, and sanitary wastes are other common sources of potentially harmful materials on construction sites.

The potential for degradation of the Bay from discharge of construction-related chemicals and disturbance of sediments from dredging is considered potentially significant and would require implementation of Mitigation Measure HYD-1 and HYD-2. As discussed in Section VIII, *Hazards and Hazardous Materials*, Mitigation Measure HAZ-1 would require preparation of a Hazardous Materials Spill Prevention Control and Countermeasure Plan to address potential spill or exposures to contaminants, including measures for spill control, containment prevention, cleanup, wastewater management, and other foreseeable hazards. The equipment maintenance and refueling restrictions, hazardous materials measures, and site reclamation measures included in these measures would

minimize the potential for the construction of the project to violate any water quality standards or waste discharge requirements to a less-than-significant level.

Due to shallow groundwater, construction may require pumping of groundwater to dewater excavations. Depending on the quality, the dewatering effluent may be acceptable for discharge to the storm drainage system, the sanitary sewer system, or directly to the Bay. Use of the storm drainage system or the sanitary sewer system would require proper permitting from the regulating agencies; the RWQCB for discharges to the storm drain system or surface waters and/or EBMUD for discharges to the sanitary sewer. These permitting programs are existing programs that would be expected to adequately mitigate potential impacts to water quality to a less than significant level.

If construction requires dewatering, and if it is deemed that the amount of dewatering is not covered under the Construction General Permit and needs to be discharged directly to the Bay, the applicant would need to gain coverage under the NPDES Low Threat Discharge and Dewatering Permit. This permit would require treatment of dewater prior to any discharge. As a performance standard to ensure proper function of the BMPs required under the Construction General Permit, and to ensure compliance with Basin Plan standards, implementation of Mitigation Measure HYD-2 would ensure that potential water quality impacts related to sedimentation and turbidity from the proposed project are less than significant.

a.,f. **Operation.** Operational water quality impacts could also result from fuel storage and marine refueling activities, or from stormwater runoff. Storage of fuel and refueling activities could result in an accidental release of diesel and urea into San Francisco Bay. Potential water quality impacts associated with incidental releases or spills would be reduced through implementation of the SPCC Plan, which would describe transport, storage, and disposal procedures; construction site housekeeping practices, and monitoring and spill response protocols.

The Alameda Countywide NPDES Permit for stormwater runoff, Provision C.3, requires the applicant develop a compliance plan to ensure runoff is adequately collected and treated prior to any discharge. Implementation of Mitigation Measure HYD-3, which would require compliance with Provision C.3 and implementation of BMPs during operation, would ensure water quality impacts associated with stormwater runoff are less than significant.

Mitigation Measure HYD-1: Preparation and Implementation of Project SWPPP

The project construction contractor will prepare and implement a SWPPP to protect water quality during construction. The San Francisco Bay RWQCB, the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. The SWPPP will include a description of BMPs to be applied to minimize the discharge of pollutants from the site during construction. These construction BMPs will include, but will not be limited to, the following:

- Train construction personnel in proper material delivery, handling, storage, cleanup, and disposal procedures.
- Develop spill response and containment procedures for construction.
- Identify all storm drains and catch basins near the construction site and ensure all workers are aware of their locations to prevent pollutants from entering.
- Protect all storm drains and catch basin inlets.

- Develop an erosion control and sediment control plan for wind and rain.
- Refuel vehicles and equipment away from San Francisco Bay to prevent runoff and to contain spills.
- Minimize the potential for contamination of San Francisco Bay by maintaining spill containment and clean up equipment onsite, and by properly labeling and disposing of hazardous waste.
- Inspect site regularly to ensure that all BMPs are intact and maintain as needed.
- Conduct daily site cleanings as needed.
- Maintain written records of inspections, spills, BMP-related maintenance activities, corrective actions, and visual observations of offsite discharge of sediment or other pollutants, as required by the RWQCB.

Mitigation Measure HYD-2: Monitor for Turbidity during Dredging Activities

The San Francisco RWQCB makes certain exceptions for dredging activities, and the typical Basin Plan standards for turbidity may not apply in the mixing zone of the dredging activities. However, outside of the mixing zone, which could be more than 500 feet, WETA or its contractor would need to monitor and ensure Basin Plan standards for turbidity are met. Basin Plan standards are as follows:

- Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.
- Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%.
- Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.
- Where natural turbidity is greater than 100 NTUs, increases shall not exceed 1%.

The specific monitoring schedule including any additional timing information and quality assurance shall be determined by WETA in collaboration with the San Francisco RWQCB.

Mitigation Measure HYD-3: Implement RWQCB Provision C.3 for Control of Stormwater and BMPs for Operational Protection of Water Quality

Under Provision C.3, WETA will develop a compliance plan to ensure runoff is adequately collected and treated prior to discharge, and that peak flows and flow durations match pre-project conditions. BMPs included in the compliance plan may require operational maintenance such as cleaning and sweeping to ensure that the fuel storage vaults and fueling areas are kept clean and stormwater runoff does not collect contaminants such as urea and diesel stored at the site. The final compliance plan shall be approved by the San Francisco RWQCB.

b. Implementation of the proposed project would not deplete groundwater supplies or interfere with groundwater recharge resulting in groundwater loss. The project is located in a paved area and thus the project would not change recharge. Groundwater at the site is not used for water supply. The driving of piles beneath the site may encounter groundwater, but would not change aquifer conditions. No impact would result.

c., d., e. The landside portion of the project site is currently vacant, paved asphalt. The project proposes to construct a 4-story structure of approximately 25,000 square feet on approximately 15,500

square feet of landside space. As described in Chapter 2, *Project Description*, a system of new onsite catch basins and pipes would collect site runoff and be connected to the existing 12-inch storm drain line. Site runoff would be treated by oil-water separators and treatment vaults (if needed) in accordance with applicable stormwater regulations before discharge from the site. As noted above, the project must also comply with the Countywide NPDES permit, including Provision C.3 on detaining and treating stormwater runoff. Therefore, the proposed project would not substantially alter the existing drainage pattern, increase the rate or amount of runoff that could result in flooding, or provide substantial additional sources of polluted runoff. Impacts would be less than significant with mitigation (HYD-3).

g. The proposed project would not result in the placement of housing within the current 100-year flood hazard area or that projected with sea level rise. No impact would result.

h. The landside portion of the project site is outside of the current 100-year flood event, would be outside the tidal 100-year flood area in 2050, and would be inside the tidal 100-year flood areas in 2100 accounting for predicted sea level rise (see discussion above). While tidal flows from San Francisco Bay would encounter the project structures by 2050 in large events, and given the source of flooding would be tidal, the proposed project would not impede or redirect tidal flood flows such that off-site impacts to other locations would occur. Impacts would be less than significant and no mitigation is required.

i. The marine portion of the project site will be subject to inundation by the current and future 100-year flood event. The proposed project as currently proposed would be designed to withstand storm-induced wave actions (Coast and Harbor Engineering 2010). The proposed design would provide wave protection by locating small vessels behind the main float. The proposed alignment would protect vessels from head seas for waves and winds. Also, given that the marine structures are floating, they can move with extreme event high tides and can be readily modified over time to account for future sea level rise. With 2100 expected sea level rise, the fixed pier could be vulnerable to tidal flooding; however, this timeframe would exceed the expected useful life of the pier. Therefore, impacts to the marine portion of the project site due to flooding are considered less than significant.

The finished project grade would be 13.3 feet above MLLW, which is equivalent to 10.4 feet above NGVD. The project would include a new secant pile wall that would be approximately 2 feet above grade, reaching a height of approximately 12.4 feet above NGVD. As noted above, the current 100-year high tide flood level is estimated at 6.6 feet NGVD, so the landside project site grade would be well above the 100-year event with nearly 6 feet of freeboard at the pile wall. By 2050, tidal flood levels could rise as high as 8.2 feet NGVD due to projected sea level rise, which would still leave nearly 4 feet of freeboard at the pile wall and grade elevations over 2 feet above the 100-year flood level. By 2100, tidal flood levels could rise as high as 11.2 feet NGVD due to projected sea level rise, at which time the project grade level would be nearly a foot below the 100-year flood level but the pile wall would still have about 1 foot of freeboard. Thus, the project is considered resilient for tidal flooding up to 2050, but could be inundated by extreme tidal flooding by 2100. The following mitigation would reduce this potential impact to a less than-significant level:

Mitigation Measure HYD-4: Provide Tidal Flood Wall (or other Improvements) to Address Tidal Flooding After 2050

If the facility is still in operation after 2050, it may be subject to tidal flooding during extreme tide events. As necessary to address potential flooding after 2050, WETA shall install a flood

wall or earthen berm to protect land-side facilities (including the outdoor fuel storage tanks) that provides sufficient freeboard to protect the facility from the damage in the event of a 100-year high tide. Based on current estimates, this improvement is not estimated to be required until sometime after 2050.

j. The study area is not located adjacent to any unstable slopes that may be subject to mudflows during large storm events. However, the project site is located in a tsunami inundation area as identified in the California Emergency Management Agency's California Geological Survey. As such, there is potential for the project to be inundated by a tsunami if a major seismic event were to occur (CGS 2009). Alameda Point is partially protected from inundation and damage from tsunamis due to restricted hydraulic access at the Golden Gate and the area is expected to have a reduced magnitude in the event of a tsunami. The predicted wave run-up in the bay adjacent to Alameda Point has been estimated to range from 4.7 to 5.5 feet above mean sea level for the 100-year tsunami (LSA Associates 2002). The marine facilities may be subject to damage in the event of a 100-year tsunami; however such facilities are more readily replaced due to their floating and mobile nature. The finished grade for the land-side portion of the project would be 9.7 feet above mean sea level, well above the predicted 100-year tsunami wave run-up level (unless the event were to occur within an extremely high tide, which is a very low probability event). Given that marine facilities can be readily replaced (although costly) and that land-side facilities are above the predicted inundation level, this impact is considered less than significant and no mitigation is required.

X. Land Use and Planning	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐

Environmental Setting

The proposed project is located on Alameda Point within the NAS BRAC area. A paved open area and West Hornet Avenue mark the north portion of the project site. An undeveloped City-owned park and the Bay Trail, leased to the East Bay Regional Park District, lie directly to the east. Pier 3 and the decommissioned aircraft carrier USS Hornet, now a functioning museum, are located west of the project site. The primary land use in this area is industrial. The study area is owned by the City of Alameda and is subject to the City's current (1991) general plan land use and zoning designations, including the Alameda Point element, which was added to the City's general plan in 2003.

The study area is zoned M-2, General Industrial (Manufacturing) District in the City of Alameda Municipal Code section 30-4.12.c which allows for "shipbuilding and repairing (over one hundred (100) tons" (30-4.12.c.10) and "shipping terminals" (30-4.12.c.11) following Planning Board review. The land use designation for the study area is Mixed Use Planned Development District (MX); the Alameda Point element designates the project site in the Marina (AP-3) area, which is one of three mixed-use areas. AP-3 allows marine-related industry, office, commercial, residential, recreation, and supporting retail. Uses are structured to promote waterfront activity and vitality (City of Alameda 2003).

Regulatory Setting

McAteer-Petris Act

The San Francisco Bay Conservation and Development Commission (BCDC) has jurisdiction over the San Francisco Bay which includes "all areas that are subject to tidal action" as well as the "shoreline band" which "consists of all territory located between the shoreline of San Francisco Bay … and a line 100 feet landward of and parallel with that line" (BCDC 2008). Under the McAteer-Petris Act, BCDC is the agency responsible for carrying out the San Francisco Bay Plan (Bay Plan), which guides

future uses of the Bay and shoreline. The study area occupies a portion of the San Francisco Bay shoreline and is therefore under the jurisdiction of the Bay Plan.

BCDC is able to grant or deny a permit which is required by any public or private owner before proceeding with shoreline development. The Act states that BCDC should approve a permit for shoreline development if the agency determines it is in accordance with the adopted standards for the use of shoreline, the provision of public access, and advisory review of appearance.

The Bay Plan includes specific policies related to shoreline use, dredging and subtidal habitats, and access that are relevant to the proposed project. A review of relevant Bay Plan policies and the project's consistency with these policies is provided in Appendix D.

Senate Bill 100

The San Francisco Bay Trail Plan (Bay Trail Plan) was prepared by ABAG pursuant to Senate Bill 100 and mandates that the Bay Trail provide connections to existing park and recreation facilities, create links to existing and proposed transportation facilities, and be planned in such a way as to avoid adverse effects of environmentally sensitive areas (ABAG 1999). The Bay Trail Plan maintains the goal of developing a continuous trail for regional hiking and bicycling with a 400-mile "ring around the Bay", connecting parks and publically accessible open space areas around San Francisco and San Pablo Bays. The Bay Trail Plan governs the Bay Trail, which is located outside of and directly east of the project site.

Impacts Discussion

a. The proposed project involves the construction of an operations and maintenance facility on Alameda Point. As no established community exists in the immediate project vicinity and the closest neighborhood is approximately 0.5 mile from the project site, the proposed project would not substantially disrupt or physically divide any established community. There would be no impact.

b. **City of Alameda General Plan.** The project as currently proposed would be consistent with the City of Alameda land use and zoning designations (Municipal Code section 30-4.12c) and the City of Alameda General Plan. Specifically, the proposed project is in accord with the General Plan Policy 9.3.n for the western shore of the marina to "encourage industrial and marine-related industrial uses that are consistent with the Public Trust and sensitive to the Wildlife Refuge." The proposed project would be within lands that were legislatively granted to the City of Alameda, pursuant to Chapter 348, Statutes of 1913, as amended. Administration of the lands was granted to the City of Alameda and as the project is consistent with the terms of their legislative grant, no additional authorization for this project would be required from the California State Lands Commission (Kato pers. comm 2010).

   San Francisco Bay Plan. The proposed project would be consistent with the findings and policies outlined in the Bay Plan. Refer to Appendix D for a consistency analysis of the proposed project with relevant policies contained in the Bay Plan. WETA would be required to obtain a permit from BCDC as a condition of project approval and BCDC's Design Review Board would review, evaluate, and advise on the proposed design of the project to determine accordance with Bay Plan policies.

   The only Bay Plan Map Policy relevant to the project site is Policy 21 (see Plan Map 4 in the Bay Plan), which states that projects are allowed only if they are protective of harbor seals and other

sensitive wildlife (BCDC 2008). Refer to Section IV, *Biological Resources* for a discussion of impacts associated with sensitive wildlife in the project area; Section VI, *Geology and Soils* for a discussion of impacts associated with erosion control and safety of fills; Section IX, *Hydrology and Water Quality* for impacts to water quality; Section VIII, *Hazards and Hazardous Materials* for impacts related to oil spill prevention; and Section I, *Aesthetics* for impacts associated with scenic resources in the project area. Mitigation is proposed that would reduce potential impacts to a less than significant level.

The overwater coverage of the existing structures at the project site is approximately 20,220 SF and the total overwater coverage of the new facility is estimated to be approximately 20,000 SF; therefore, the project would slightly decrease overwater coverage areas in the Bay. The project would result in only a limited amount of net fill resultant from approximately 50 additional piles compared to the existing condition. Project dredging would be done in accordance with established work windows to be protective of key biological resources and in accordance with state and federal water quality regulations.

The project would not provide access to a small frontage of the shoreline (approximately 230 feet within the 0.25 acre land-side site). The Bay Plan recognizes that "some port or water-related industrial activities may pose a substantial hazard to public access users" and "in some cases, certain uses may unduly conflict with accompanying public access" (BCDC 2008). The project would be located adjacent to the secure MARAD compound that has federally mandated security requirements. In addition, the WETA facility has its own need for security given the storage of fuel as well as the ferry vessels themselves. In compliance with U.S. Coast Guard (per the requirements in Marine Transportation Security Act – 33 CFR 104 for vessels and the facility itself) and WETA safety requirements, public access to specific project site would be restricted to protect the vessels, storage tanks, and employees. It is important to note that whether or not the WETA facility is completed at this location, the Bay Trail would not be able to be extended along the shoreline at this location given the MARAD security requirements. However, as part of the project and in partnership with the City of Alameda, WETA would make improvements to the Bay Trail to improve public access and trail connectivity throughout Alameda Point. The City of Alameda plans to complete the Bay Trail from the vicinity of the project through to the new location of USS Hornet outside the secure MARAD facility. Thus public access around the site would be maintained through West Hornet Avenue and the Bay Trail and access would be provided to the maximum extent feasible consistent with the appropriate need for safety and security relative to both WETA's facility and for MARAD. The project, therefore, would be accordance with the public access provisions of the Bay Plan.

San Francisco Bay Trail. The proposed access improvement options to the Bay Trail (i.e., funding for improved signage/striping, overlook area, sidewalk widening) are consistent with the policies outlined in the Bay Trail Plan, specifically Policy 20 which calls for "a consistent signing program … throughout the trail system" as well as the larger aim of "developing the trail alignment … consistent with the need to balance the constraints posed by the different natural and built environments around the Bay" (ABAG 1999). The proposed project is therefore in accordance with the policies and goals of the Bay Trail Plan.

In addition to the BCDC permit, WETA would also be required to obtain a use permit from the City of Alameda as a condition of project approval. Given that the proposed project would not conflict with any applicable land use plans, policies, or regulations and BCDC and City of Alameda permit approvals would be required, land use impacts would be less than significant.

c. There are no adopted habitat conservation plans (HCPs) or natural community conservation plans (NCCPs) governing the project site. Because no HCPs or NCCPs govern the project site, there would be no impact under CEQA. Refer to Biological Resources setting for further information.

The Alameda National Wildlife Refuge has been proposed to include the western part of Alameda Point, including marine areas between the shoreline and Breakwater Island. The project would include transit by ferry vessels through the marine portion of the proposed refuge. A draft Conservation Plan has been developed for the proposed refuge (USFWS 1998). The only project activity that would affect the refuge itself would be transiting vessels. The draft Conservation Plan includes a recommended access corridor for all vessel traffic to keep vessels well away from the shoreline of the main portion of the refuge as well as from Breakwater Island, in order to protect bird species and marine mammals from disruption. As discussed in Section IV, *Biological Resources*, mitigation has been identified to require all vessels using the WETA facility to keep to the proposed access channel. Although the Conservation Plan has not yet been adopted and the refuge has not been established; thus, this is not considered an impact under CEQA. With the identified mitigation, the proposed project would be consistent with the draft Conservation Plan should the refuge be established and the plan adopted at a future date.

XI. Mineral Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Impacts Discussion

a., b. The City of Alameda has omitted the discussion of mineral resources from the City of Alameda General Plan (1991), including the Alameda Point Specific Plan, indicating that there are no significant mineral resources within the City of Alameda; no mineral resource zones govern the study area (City of Alameda 1991; Thomas 2010). Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region or a locally important mineral resource recovery site delineated on a land use plan. The proposed project would have no impact.

XII. Noise	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☐	☒	☐	☐
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e. Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Terminology

Noise

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water, and noise is generally defined as unwanted sound that annoys or disturbs people. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a

process called "A-weighting," written as "dBA" and referred to as "A-weighted decibels." Table N-1 provides definitions of sound measurements and other terminology used in this section, and Table N-2 summarizes typical A-weighted sound levels for different noise sources.

In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10}, L_{20}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). L_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

For a point source such as a stationary compressor or construction equipment, sound attenuates based on geometry at rate of 6 dB per doubling of distance. For a line source such as free flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance (Caltrans 1998). Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of 1–2 dB per doubling of distance. Barriers such as buildings and topography that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Table N-1. Definition of Sound Measurements

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
Maximum Sound Level (L_{max})	The maximum sound level measured during the measurement period.
Minimum Sound Level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent Sound Level (L_{eq})	The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (L_{xx})	The sound level exceeded *X%* of a specific time period. L_{10} is the sound level exceeded 10% of the time.
Day-Night Level (L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7 p.m. to 10 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.
Peak Particle Velocity (Peak Velocity or PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/sec.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Source: Caltrans. 2009. Technical noise supplement to the Caltrans traffic noise analysis protocol. Sacramento.

Table N-2. Typical A-weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: Caltrans 1998.

Vibration

Operation of heavy construction equipment, particularly pile driving and other impact devices such as pavement breakers create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance.

Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity PPV.

Table N-3 summarizes typical vibration levels generated by construction equipment (FTA 2006a).

Table N-3. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet
Pile driver (impact)	0.644 to 1.518
Pile drive (sonic/vibratory)	0.170 to 0.734
Vibratory roller	0.210
Hoe ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: FTA 2006a.

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions (FTA 2006a). PPV_{ref} is the reference PPV from TableN-3:

$$PPV = PPV_{ref} \times (25/Distance)^{1.5}$$

Tables N-4 and N-5 summarize typical human response to transient and continuous vibration that is usually associated with construction activity. Equipment or activities typical of continuous vibration include: excavation equipment, static compaction equipment, tracked vehicles, traffic on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include: impact pile drivers, blasting, drop balls, “pogo stick” compactors, and crack-and-seat equipment (Caltrans 2004).

Table N-4. Human Response to Transient Vibration

PPV	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible

Source: Caltrans 2004.

Table N-5. Human Response to Continuous Vibration

PPV	Human Response
3.6 (at 2 Hz) to 0.4 (at 20 Hz)	Very disturbing
0.7 (at 2 Hz) to 0.17 (at 20 Hz)	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible
Source: Caltrans 2004.	

Regulatory Setting

City of Alameda Municipal Code

Chapter 4.10 of the City of Alameda Municipal Code specifies exterior noise standards at sensitive uses. Table N-6 shows the City of Alameda's exterior noise standards for residential areas, schools, churches, hospitals, and public libraries.

Table N-6. City of Alameda Noise Level Standards (dBA) at single or multi-family residential, schools, churches, hospitals, and public libraries

Category	Cumulative number of minutes in any one hour	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7a.m.)
1	30	55	50
2	15	60	55
3	5	65	60
4	1	70	65
5	0	75	70
Source: City of Alameda. 2010. City of Alameda Municipal Code. Available: http://search.municode.com/html/16753/level1/THALCAMUCO.html			

The code specifically states that the noise standards do not apply to noise sources associated with construction provided that construction activities take place between the hours of 7 a.m. to 7 p.m. Monday through Fridays or 8 a.m. to 5 p.m. on Saturdays.

The code also has specific prohibitions related to vibration and construction noise. The code prohibits operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or 150 feet from the source if on a public space or public right-of-way.

The code also prohibits construction outside the hours of 7 a.m. to 7 p.m. Monday through Fridays and 8 a.m. to 5 p.m. on Saturdays.

Environmental Setting

Noise Sensitive Land Uses

For purposes of this noise impact analysis, sensitive receptors include residences, schools, hospitals, and similar uses sensitive to noise. Sensitive receptors near the study area include Encinal High School on 210 Central Avenue, which is about 2,700 feet east of the project site. Hornet Field, part of Encinal High School, is located roughly 1,000 feet east of the project site. The closest residential uses are approximately 2,800 feet northwest of the project site along Central Avenue. Multi-family residential housing is located about 3,300 feet east of the project site along Tideway Drive. The Ballena Yacht Club is also located at about that same distance (i.e., 3,000 feet) east of the study area. No sensitive receptors are located on Breakwater Island; refer to Section IV, *Biological Resources,* for a discussion of noise impacts on sensitive biological resources.

Existing Noise Levels

Existing noise levels in the vicinity of the school and residences is governed primarily by traffic on local roadways and boats accessing the nearby docks. Ambient noise levels in this type of environment would typically be in the range of 50 to 60 dBA.

Impacts Discussion

a. **Construction and Maintenance Dredging Noise.** The major landside construction activities include site preparation and demolition, ground improvement and bulkhead construction, building construction, and utility installation. Construction equipment would include the use of a backhoe and excavators, haul trucks, track mounted drilling rig, concrete and gravel delivery trucks, wheeled hydraulic crane, delivery and support trucks.

The major waterside construction activities include dredging, marine pile installation, marine float installation, fixed pier construction, and marine utility and outfitting. The pile installation would require the use of a support and material barge; barge mounted pile driver; support boat; and occasional tug; the float installation would require work boats, an occasional tug, support barges, and barge mounted cranes. The pier construction would use work boats, a support barge, barge mounted crane, wheeled crane, and support and haul trucks; and the utility and outfitting would require a wheeled crane and support trucks.

For the purposes of this analysis, maintenance dredging is considered with construction activities because it would occur once every 5 or 10 years and would be temporary. Table N-7 summarizes typical construction noise levels for various types of equipment likely to be used for construction of the proposed project. L_{max} sound levels at 50 feet are shown along with the typical acoustic use factor. The acoustic use factor is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its loudest condition) during construction operation and is used to estimate L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power 50% of the time (acoustical use factor of 50) is 3 dB less than the L_{max} value. In order to determine the potential noise impacts from construction of the proposed project noise from general construction activities, pile driving, and dredging have been evaluated.

For general construction noise, the three loudest pieces of equipment likely to operate at the same time (i.e., pneumatic tool, drill rig, and excavator) were evaluated; for dredging, noise from a dredge and tug boat were calculated; for pile driving noise from a pile driver only has been evaluated.

Table N-7. Typical Construction Noise Emission Levels

Equipment	Typical Noise Level (L_{max})a	Acoustical Use Factor
Auger drill rig	84	20
Backhoe	78	40
Crane	81	16
Dump truck	76	40
Excavator	81	40
Pile Driver	101	20
Pneumatic Tool	85	50
Bucket dredge[b]	81	16
Tug boat[c]	91	40

Source: Federal Highway Administration 2006.
[a] dBA, A-weighted decibel level, measured at 50 feet
[b] Based on data for a crane
[c] Calculated for tug boat using 900 hp reciprocating engine (Hoover & Keith 2000).

To calculate construction noise levels at receptor locations a point source attenuation rate of 6 dBA per doubling of distance has been used. Because the ground surface between project sources and receptors is predominantly water and pavement, additional attenuation from ground absorption has not been included in the calculations. Table N-8 shows calculated noise levels for general construction activities.

Table N-8. Calculated General Construction Noise Levels

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	88	84
100	-6	82	78
200	-12	76	72
300	-16	73	68
400	-18	70	66
500	-20	68	64
600	-22	67	62
700	-23	65	61
800	-24	65	60
900	-25	63	59
1000 [a]	-26	62	58
1200	-28	61	56
1400	-29	59	55
1600	-30	58	54
1800	-31	57	53
2700 [b]	-35	54	49
2800 [c]	-35	53	49
3300 [d]	-36	52	48

[a] Hornet Field
[b] Encinal High School
[c] Single-Family Residential
[d] Multi-Family Residential
Source: ICF International.

Table N-9 shows calculated noise levels for pile driving.

Table N-9. Calculated General Noise Levels from Pile Driving

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
50	0	101	99
100	-6	95	93
200	-12	89	87
300	-16	85	84
400	-18	83	81
500	-20	81	79
600	-22	79	78
700	-23	78	77
800	-24	77	76
900	-25	76	74
1000 [a]	-26	75	73
1200	-28	73	72
1400	-29	72	71
1600	-30	71	69
1800	-31	70	68
2700 [b]	-35	66	65
2800 c	-35	66	64
3300 d	-36	65	63

[a] Hornet Field
[b] Encinal High School
[c] Single-Family Residential
[d] Multi-Family Residential
Source: ICF International.

Table N-10 shows calculated noise levels for construction and maintenance dredging.

Table N-10. Calculated General Noise Levels for Construction and Maintenance Dredging

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
50	0	91	84
100	-6	85	78
200	-12	79	72
300	-16	76	69
400	-18	73	66
500	-20	71	64
600	-22	70	63
700	-23	68	62
800	-24	67	60
900	-25	66	59
1000 a	-26	65	58
1200	-28	64	57
1400	-29	62	55
1600	-30	61	54
1800	-31	60	53
2700 b	-35	57	50
2800 c	-35	56	49
3300 d	-36	55	48

[a] Hornet Field
[b] Encinal High School
[c] Single-Family Residential
[d] Multi-Family Residential
Source: ICF International.

The results shown in Tables N-8 and N-9 indicate that noise from general construction activities and dredging could be as high as 58 dBA-L_{eq} at Hornet Field and 49 dBA-Leq at the nearest residences. The results in Table N-10 indicate that noise from pile driving could be as high as 73 dBA-L_{eq} at Hornet Field and 64 dBA-L_{eq} at the nearest residences. Construction activities would be limited to the hours between 7 a.m. and 7 p.m. Monday through Friday and 8 a.m. to 5 p.m. on Saturdays when construction noise is exempt from the noise limits. Accordingly, construction activity is not expected to exceed applicable city noise standards. However, maintenance dredging could occur 10 to 12 hours a day. Dredging that occurs before 7 a.m. or after 7 p.m. would occur during non-exempt hours and could exceed City of Alameda noise standards at the Hornet field. This would be a significant impact. Implementation of Mitigation Measure N-1 would reduce this impact to a less-than-significant level.

Mitigation Measures N-1: Limit When Maintenance Dredging Occurs

WETA will limit maintenance dredging to the hours between 7 a.m. and 7 p.m. on weekdays and 8 a.m. to 5 p.m. on Saturdays per the City of Alameda Municipal Code, Chapter 4.10.

a. **Operational Noise.** Operation of the facility would include a crane for removing and replacing vessel engines and a davit hoist, which is a crane-like device. The proposed marine facility would provide berthing slips for up to eleven vessels and would operate between 5 a.m. and 11 p.m. The number of vessels accessing the facility would vary depending on need. A reasonable worst-case assumption is that up to four vessels would access the facility per hour. The FTA has developed noise source levels for ferries accessing a dock. The source levels assume a horn would be sounded during each arrival. The sound level of four ferries accessing the facility is calculated to be 64 dBA-L_{eq} at 50 feet. This sound level has been combined with the sound level of two cranes operating to develop a facility operation sound level of 77 dBA-L_{eq} at 50 feet.

Table N-11 shows calculated sound levels for operational activities.

Table N-11. Calculated Noise from Facility Operations

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
50	0	84	77
100	-6	78	71
200	-12	72	65
300	-16	68	62
400	-18	66	59
500	-20	64	57
600	-22	62	56
700	-23	61	54
800	-24	60	53
900	-25	59	52
1000[a]	-26	58	51
1200	-28	56	50
1400	-29	55	48
1600	-30	54	47
1800	-31	53	46
2700[b]	-35	49	43
2800[c]	-35	49	42
3300[d]	-36	48	41

Source: ICF International.

The results in Table N-11 indicate that noise from operational activities could be as high as 51 dBA-L_{eq} at Hornet Field and 42 dBA-L_{eq} at the nearest residence. Although noise at Hornet Field could exceed the 50 dBA noise standard after 10 p.m., the unlighted field would not be in use at that time. Accordingly, there would be no significant noise impacts from facilities operations.

Project operations would also include occasional truck trips associated with fuel and oil deliveries and trash pickup, as well as daily employee trips. Because of the small number of trips associated with these activities and given the distance to the nearest residences, there would be no exceedance of noise standards. There would be no significant noise impacts.

b. Construction activities associated with the operation of heavy equipment may generate localized groundborne vibration. Vibration from non-impact construction activity is typically below the threshold of perception when the activity is more than 50 feet from a sensitive receptor. Vibration from pile driving is typically below the threshold of perception beyond approximately 250 feet. Additionally, vibration from these activities would be of limited duration and would terminate when construction is completed. Because the nearest sensitive receptors are more than 1,000 feet from the project site, the vibration impacts associated with construction is considered less than significant.

c. The analysis of noise from project operations discussed above under item a) indicates that operational noise levels at the nearest noise sensitive uses could be in the range of about 41 to 51 dBA. With existing noise levels in the range of 50 to 60 dBA no substantial permanent increase in noise expected. Noise impacts would be less than significant.

d. As discussed above, construction and dredging maintenance activities would result in a temporary increase in noise during the construction period and once during the 5-to-10 year maintenance dredging. However, the results in Tables N-8 through N-10 indicate that noise from these activities would not exceed applicable City noise standards with the exception of potential dredging activity after 7 p.m. As such noise impacts associated with temporary increases in noise are not considered to be significant with the exception of dredging after 7 p.m. Implementation of Mitigation Measure N-1 would reduce this impact to a less-than-significant level.

e., f. The proposed project is located in what was formerly the NAS, which was closed in 1997. No airport land use plan governs the project site; there are no public airports, public use airports, or active private airstrips within two miles of the project site. Therefore, the proposed project would not expose people residing or working in the study area to excessive noise levels. There would be no impact.

XIII. Population and Housing	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting

The City of Alameda has a population of 74,958 and contains 32,010 housing units (U.S. Census 2008). By 2025, the population of the City of Alameda is projected to total 87,100 (ABAG 2002). The ABAG, considering such factors as jobs, housing, land use and transportation, issued the Regional Housing Needs Determination (RHND) which, for the period of 2007 through 2014, assigned the City of Alameda a Regional Housing Needs Allocation of 2,046 units to achieve a jobs/housing balance (City of Alameda 2009).

Impacts Discussion

a. The proposed project would serve as the central San Francisco Bay base for WETA's ferry fleet, , OCC, and ECC. No new homes or businesses are proposed as part of the project. The construction of the proposed facility would require 50 to 100 workers over the duration of the project with anywhere from 30 to 50 workers on the site at one time. The project therefore would result in temporary employment of the 50 to 100 workers through the approximately16-month construction period. This temporary employment opportunity, however, would not be expected to exceed what is normally available to construction workers in the local labor pool. Most of these workers are presumably already residents of the San Francisco Bay Area and would not create demand for additional housing in the area. The projected population growth of the City of Alameda would not be significantly altered by the temporary increase in workers for the construction phase or by the employees needed for the operation of the facility due to the small number of both.

   Operation of the facility would require between 42 and 58 WETA employees and would not generate substantial permanent employment opportunities; therefore the proposed project is not anticipated to induce substantial population growth in the City of Alameda. Furthermore, the proposed project would make use of existing roads (e.g., West Hornet Avenue) and utility connections and would not indirectly induce substantial population growth through the proposed improvements.

   Because of the temporary nature of the employment that would be generated by construction, the small number of employees necessary for its operation, and the fact that no substantial growth-

supporting changes to infrastructure would occur, impacts on population and housing would be less than significant.

b., c. The proposed project would be built in an undeveloped area of Alameda Point. The closest residential neighborhood is approximately 2,800 feet (0.53 mile) northwest of the study area; the proposed project would not involve the construction or removal of residences, commercial, or industrial facilities. No housing units or people would be displaced by the project and no replacement housing would be necessary. There would be no impact.

XIV. Public Services	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Impacts Discussion

a. As discussed in Section XIII, *Population and Housing*, the proposed project would not materially increase population and thus would not require new or altered police, fire, school, or park facilities or service. There would be no impact on these public services.

XV. Recreation	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

Impacts Discussion

a., b. The project proposes to construct a central San Francisco Bay base for WETA's ferry fleet, , OCC, and EOC. Public access would be restricted; the site would be fully fenced in compliance with U.S. Coast Guard and WETA requirements. As discussed in Section XIII, *Population and Housing*, the proposed project would not induce population growth in the area and therefore would not increase the use of regional parks or other recreational facilities. WETA employees permanently stationed at the proposed facility could use the adjacent park during breaks; however, the park is currently undeveloped and underutilized and any increase of new users is considered negligible. The Bay Trail extends for approximately 1 mile along the southeastern shoreline, and runs adjacent to the project site before connecting to West Hornet Avenue; the designated Bay Trail (off street) currently runs along Main Street (San Francisco Bay Trail 2010). As part of the project, WETA proposes to implement one, or a combination thereof, of the three offsite access improvement options (i.e., funding for signage/striping, overlook area, sidewalk widening) to improve trail continuity for future connections in and around Alameda Point (refer to Section X, *Land Use and Planning* for a discussion of public access). Therefore, given the improvements to the Bay Trail and no substantial increased use of recreational facilities in the project vicinity is expected, the proposed project is not expected to impact any existing recreational activities or experiences at the site. The proposed project would not cause substantial physical deterioration of existing recreational facilities, nor would it require the construction or expansion of recreational facilities that might have an adverse physical impact on the environment. Impacts on recreational facilities would be less than significant.

XVI. Transportation/Traffic	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐
b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e. Result in inadequate emergency access?	☐	☐	☒	☐
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Environmental Setting

Vehicular Access

The project site is not directly accessible by any freeway or by any one local street. Therefore, in order to more clearly describe the relationship between regional roadways, local streets in Alameda, and internal access roads within the NAS, the following section describes access to the project site first, in terms of access to Alameda; second, in terms of access to Alameda Point; and third, in terms of access within Alameda Point.

Access to Alameda

Regional access to Alameda is available from Interstate 880 (I-880) and Interstate 980 (I-980) and from Oakland city streets. State Route 260 (SR 260) provides a connection between Alameda and I-880/I-980 via the Webster and outbound Posey Tubes. Traffic emerging from the Webster Tube is conveyed in a southbound direction towards the western interior of Alameda along SR 260 (Webster Street), which later splits off and forms two divergent southbound routes: southbound Webster Street and southbound Constitution Way. Northbound traffic on SR 260 (Webster Street) and Constitution Way, which converge approximately 0.2 mile south of the Posey Tube portal, travel in the opposite direction through the Posey Tube and emerge in Oakland on the opposite side of the estuary. Additional access from I-880 and from local streets in Downtown Oakland is also available by means of the bridges at Park Street, Tilden Way and High Street. Both Park Street and High Street continue in a southbound direction, terminating at Otis drive along the extreme southern edge of Alameda Island, while Tilden Way angles west through Alameda's central business district and eventually connects with Lincoln Avenue, a major east-west thoroughfare in Alameda.

Access to Alameda Point

Access to Alameda Point is afforded via one of several east-west streets that extend through much of Alameda and either terminate at Alameda Point or connect to other terminal east-west streets. These include Buena Vista Avenue, Lincoln Avenue, and Central Avenue (note: Central Avenue is designated as State Route 61 between Webster Street and Sherman Street). Streets that connect to or continue from the aforementioned streets and terminate at Alameda Point include Atlantic Avenue, Pacific Avenue, and Central Avenue/Main Street.

Access within Alameda Point

Within the southeastern portion of Alameda Point, where the proposed project is located, Skyhawk Street, Viking Street, and Ferry Point comprise the primary north-south routes of travel, while W. Oriskany Avenue, Ticonderoga Avenue, and West Hornet Avenue comprise the primary east-west routes (Figure 3-5). These roads generally convey a low volume of traffic; consequently, intersections are not signalized within Alameda Point but, rather, are stop-sign controlled on most street approaches. The project site is located near the intersection of West Hornet Avenue and Ferry Point, which essentially marks the point of convergence of the two roadways and the paved service road that extends from Pier 3. No stop signs are posted at any of the approaches to the intersection.

Level of Service Definitions and Standards

Definitions

The quality of service provided by a roadway or intersection is usually measured in terms of three parameters.

- **Level of service (LOS):** A qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience.
- **Volume to capacity (V/C) ratio:** The number of vehicles that travel on a transportation facility divided by the full vehicular capacity of that facility (the number of vehicles the facility was designed to convey).

Source: ICF International, 2010.
Image: Google Inc. 2010. Google Earth Pro, Version 5.2.
Mountain View, CA. Accessed: November 10, 2010.

Graphics ... 00789.08 (3-8-11)

ICF INTERNATIONAL

Figure 3-5
Alameda Point Roadways

- **Delay:** The additional travel time experienced by a vehicle or traveler because of inability to travel at optimal speed, and/or stops due to congestion or traffic control.

Table TRA-1 shows the relationship between V/C ratio, delay, driving conditions and LOS.

Table TRA-1. V/C Ratio, Delay, and Traffic Flow Conditions for LOS Designations

		Average Delay (seconds per vehicle)		
LOS	**Approximate Maximum V/C**	**Stop-Controlled Intersection**	**Signalized Intersection**	**Traffic Flow Conditions**
A	0.6	≤10	≤10	Free-flow operations; vehicles unimpeded in ability to maneuver in traffic stream.
B	0.7	11–15	11–20	Reasonable free-flow conditions; only slightly restricted ability to maneuver.
C	0.8	16–25	21–35	Flows still near free-flow speed but noticeably restricted ability to maneuver.
D	0.9	26–35	36–55	Speeds begin to decline; maneuverability limited and queues begin to form.
E	1.0	36–50	56–80	Operation at capacity of roadway; maneuverability extremely limited and queues form with any disruption.
F	>1.0	>50	>80	Failure conditions indicating breakdowns in vehicular flow with long queues forming at breakdown points.

Source: Transportation Research Board 2000.

Level of Service Standards

City of Alameda

The City of Alameda has defined the limit of acceptable intersection operations as LOS D. Significant traffic impacts at intersections are defined to occur when the addition of new project traffic causes traffic operating conditions to deteriorate from an acceptable level of service to an unacceptable level, or for LOS D or better to LOS E or F.

The Alameda County Congestion Management Program

The basic LOS standard adopted by the Alameda County Congestion Management Agency (CMA) for the Congestion Management Program (CMP) and Metropolitan Transportation System (MTS) roadways segments is LOS E. In Alameda, CMP-designated roadways that provide local access to the project site include Encinal Avenue/SR 61, Webster Street/SR 260, Atlantic Avenue, and Park St. MTS routes in Alameda that provide local access to the project site include Central Avenue/Main Street, Webster Street/SR-260, Constitution Way, Encinal Avenue/SR 61, Park Street, and High Street. A description of the specific regulatory responsibilities of the CMA is described in more detail in the *Regulatory Setting* section.

Existing Levels of Service

Analysis of existing intersection levels of service in the project vicinity relies upon the traffic analysis in the *City of Alameda Transportation Element Update Final Environmental Impact Report* (PMC 2008). Based on that analysis, the following signalized intersection in Alameda was determined to operate unacceptably during peak travel times (PMC 2008).

- Park Street/Blanding Ave.

No traffic count data for Alameda Point is currently available. However, due to historically low traffic volumes in the area, all intersections within the immediate project vicinity are presumed to operate acceptably, with minimal delays, during peak travel times.

Future Traffic Conditions

The Transportation Element Update FEIR analyzed future cumulative traffic operating conditions in horizon year 2030, with the assumption that increases in future development, growth forecasts, and traffic volume would occur as a result of implementing the Traffic Element Update. The Final Transportation Element for the Alameda General Plan was adopted by the City Council in February 2009. The FEIR determined that, with implementation of the Transportation Update, the resulting change in traffic operating conditions in 2030 would have significant impacts at the following nine signalized intersections, causing them to operate unacceptably during peak travel times (PMC 2008).

- Eighth Street/Central Avenue.
- Park Street/Clement Avenue.
- Broadway/Tilden/Eagle.
- Broadway/Otis Drive.
- Tilden/Blanding/Fernside Blvd.
- High Street/Fernside Blvd.
- High Street/Otis Drive.
- Island Drive/Doolittle Drive.
- Park Street/Blanding Ave.

No existing traffic data or future traffic forecasts for Alameda Point is currently available.

Transit

The project area is not currently served by transit.

The City of Alameda operates two ferries terminals: one for the Alameda/Oakland Ferry and the other for the Alameda/Harbor Bay Ferry. The Alameda ferry terminal is located at 2990 Main Street along the estuary. The Alameda/Oakland Ferry serves Alameda, Oakland's Jack London Square, the Downtown San Francisco Ferry Terminal, and Pier 41. The schedule provides five ferries during the morning commute and eight ferries during the evening commute.

The Alameda Harbor Bay Ferry provides weekday commuter service between Bay Farm Island and the Downtown San Francisco Ferry Terminal. The Bay Farm Island terminal is located at 2 McCartney Drive

at the end of Harbor Bay Parkway. The schedule provides 6 ferries between Harbor Bay and San Francisco during the morning and evening commute. Ferries pass within approximately 0.25 mile of the project site, but do not presently serve the site or are planned to in the future.

Bikeways and Pedestrian Facilities

The bicycle facilities in Alameda include separate bicycle paths or multi-use trails (Class I), as well as on-street bike lanes (Class II), and bike routes (Class III). The City of Alameda has prepared a recent master plan update that recommends numerous shoreline trail enhancements, including a Class I path encircling Alameda Point that is consistent with the current and potential future alignments of the San Francisco Bay Trail.

The existing Bay Trail is a multi-use trail that conveys bicycle and pedestrian traffic along the southeastern shoreline of Alameda Point. In the site vicinity, the trail abuts an undeveloped park containing several picnic tables and connects directly north of the project site to West Hornet Avenue. A trailhead with a kiosk, bollards, and a park bench is located at the West Hornet Avenue entrance to the trail.

Regulatory Setting

Regional

The Alameda County Congestion Management Program

The CMA is responsible for ensuring local government conformance to the CMP, which requires that LOS performance standards be established and monitored biennially on all Alameda County CMP-designated and Metropolitan Transportation System roadways. CMA also requires that local jurisdictions address traffic operating conditions for development projects that are expected to generate 100 or more p.m. peak-hour trips.

The basic LOS standard adopted by the CMA for the CMP and Metropolitan Transportation (MTS) roadways segments is LOS E.

Local

Traffic Capacity Management Procedure

The Traffic Capacity Management Procedure (TCMP) was adopted by the City on June 19, 2001, to address the potential deficiency of the Posey and Webster Tubes. The TCMP requires any development west of Grand Street that is projected to generate peak hour trips through the tubes in excess of 1% of the current estimated reserve capacity to prepare a traffic report. The report determines the number of project-generated peak hour trips projected to pass through the tubes in each direction during the a.m. and p.m. peak hours.

The City of Alameda has developed a Transportation Systems Management/Transportation Demand Management (TSM/TDM) plan for the entire west end of the city. Eleven TSM/TDM strategies were identified for potential implementation, including financial incentives for alternative mode use,

subsidizing shuttles to/from BART, increased frequency of transit connection at ferry terminals, carpool programs, flextime, and daily parking charges at worksites.

City of Alameda General Plan

The Transportation Element of the Alameda General Plan includes goals, policies, and implementation programs that address automobile travel, public transit, bicycle and pedestrian travel, parking, and goods movement in Alameda. The Transportation Element identifies LOS C as the desirable standard for intersection operation within the city, but acknowledges that conditions of LOS D or worse are experienced at intersections during the peak commute hours. The City of Alameda has defined the limit of acceptable intersection operations as LOS D.

Bicycle Master Plan

The City of Alameda Bicycle Master Plan was initially adopted by the City Council in January 1999 and readopted in November 2002. The Bicycle Master Plan sets forth goals and objectives to guide bicycle planning, design, and implementation of bicycle facilities in the city. The plan includes a prioritized list of projects and programs will be developed to enhance the city's bicycle network. The City of Alameda is currently initiating a Bicycle Master Plan Update.

Citywide Development Fees

In accordance with Section 27-3 of the City of Alameda Municipal Code, new residential and new or expanded industrial and commercial development is required to pay a Citywide Development Fee as a condition of development to pay for traffic safety/capital replacement and transportation improvements and facilities; parks and recreation facilities, and other public facilities, as well as to mitigate the degradation in the levels of service on public roads from new developments.

Impacts Discussion

Project effects on local and regional traffic were evaluated in light of existing and future peak hour LOS on intersections and roadway segments within the City of Alameda. However, because there is no existing or projected traffic data for Alameda Point, local LOS impacts within Alameda Point could not be assessed under near-term or future conditions. Further, the future rate and magnitude of development within Alameda Point and its effects on local traffic circulation are simply not known and are too speculative to be predicted with any specificity. Therefore, for the purposes of the impacts analysis, project traffic within Alameda Point is only evaluated in light of its effects on traffic safety, emergency access, and consistency with the City of Alameda's alternative transportation policies. Regardless of how Alameda Point develops over time, there are no foreseeable constraints that would prevent the City of Alameda from designing an effective local circulation system or from acceptably maintaining future levels of service on local intersections and roadway segments.

a., b. **Construction**. Construction of the proposed project would increase traffic in the project area and along local and regional roadways. Sources of vehicular traffic during the construction phase of the project would include construction worker commute trips, project equipment deliveries, and hauling of materials such as concrete, fill, and excavation spoils.

Workers commuting to construction sites would increase traffic in the project area. Based on preliminary estimates, it is projected that, at a maximum, the daily project workforce would consist of 30 to 50 workers on the site over an approximately 16-month period. Assuming, as a worst-case, that each worker drives alone, there would be a total of 100 trips to and from the site each day.

Haul truck traffic would include trucks carrying equipment, materials, and spoils for disposal. The exact routes and scheduling of truck trips are not known at this time. However, based on preliminary estimates, that, during the site preparation phase of the project, approximately 10 trips per day would be needed to haul spoils to an off-site disposal area, and approximately eight trips per day would be required for support vehicles. Additionally, during the building construction phase, approximately 10 trips per day would be required for support vehicles.

At a maximum, the total number of daily trips generated by the proposed project would be 128 trips. Because these trips would be temporary in nature and would be dispersed throughout the day, project traffic would neither substantially degrade the level of service on area roadways or intersections such that it would exceed the City of Alameda's LOS standard of LOS D nor violate CMA's established level of service standard of LOS E for MTS routes or CMP-designated roadways. Further, project construction would not be expected to degrade performance of the circulation system in light of the performance goals and policies established by the City and CMA for mass transit, motorized vehicles, and non-motorized travel. However, construction vehicles entering or exiting the project site could result in temporary lane closures or cause temporary delays or stoppage of through traffic in the project vicinity, which could adversely affect local traffic circulation.

Implementation of a traffic control plan to reduce peak hour traffic impacts, as described below in Mitigation Measure TRA-1, would reduce potential impacts from project construction activities on level of service, traffic flow, and safety to a less–than-significant level.

Mitigation Measure TRA-1: Develop and Implement a Traffic Control Plan

The construction contractor will mitigate the proposed project's construction-related traffic impacts by developing and implementing a Traffic Control Plan as part of the overall Construction Management Plan, in accordance with City of Alameda policies. The Traffic Control Plan will be implemented throughout the course of project construction, and will include the following elements:

- Communication plan to notify transit providers, emergency service providers, residences, and businesses located in the project vicinity of the construction plans.
- Identify roadway segments or intersections that are at, or approaching, LOS that exceeds local standards, and provide for construction-generated traffic to avoid these locations at the peak periods, either by traveling different routes or by traveling at non-peak times of day.
- Restrict delivery of construction materials to between the hours of 8 a.m. and 3 p.m. to avoid more congested morning and evening hours.
- Require that written notification be provided to contractors regarding appropriate routes to and from the construction site, and the weight and speed limits on local roads used to access the construction site.

- Provide for adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period.
- Specify that a sign be posted at all active construction areas giving the name and telephone number or e-mail address of the City of Alameda staff person designated to receive complaints regarding construction traffic.

a.b. Operation. Operation of the proposed project would require employee trips to the site each day, as well as deliveries of fuel. Based on preliminary estimates, approximately 116 trips per day would be generated by employees commuting to the site each day. Additionally, 1 or 2 trips per month would be generated by fuel trucks delivering diesel fuel to the site, and 1 trip each per month would be generated for urea fuel delivery, lube oil delivery, and waste oil collection. Thus, at a maximum, project operation would generate 116 daily employee commute trips, with the potential to generate an additional 8 fuel delivery/lube oil delivery/waste oil collection trips (4 inbound and 4 outbound trips) on any given day. Thus, as a worst case, the project could potentially generate a total of 124 trips on a given day. The addition of 124 additional project trips to area roadways and intersections could potentially degrade the City of Alameda's or the CMA's established levels of service for those facilities, particularly if the majority of these trips occur during peak hours. Impacts would be considered substantial if they caused traffic operating conditions to deteriorate from an acceptable level of service to an unacceptable level.

To reduce impacts on local and regional roadways during project operation, the proposed project would be required to pay the Alameda Citywide Development Impact Fee, which would mitigate the effects of project-related traffic, should any occur, on the major gateways to Alameda, including on the Webster and Posey Tubes and related interchanges, and on the interchange of I-880 with High Street. Additionally, the proposed project would be subject to the TCMP, which requires any development west of Grand Street that is projected to generate peak hour trips through the tubes in excess of 1% of the current estimated reserve capacity to identify ways in which the project can reduce the number of peak hour operational trips.

With payment of the Impact Fee and adherence to the provisions of the TCMP, Project operation would be in compliance with City of Alameda policies serving to reduce the effects of development on area roadways and intersections. Furthermore, project operation would not be expected to degrade performance of the circulation system in light of the performance goals and policies established by the City of Alameda and the CMA for mass transit, motorized vehicles, and non-motorized travel. Therefore, operational impacts would be less than significant.

c. Neither construction nor operation of the proposed project is expected to have an effect on air traffic patterns. There would be no impact.

d. The proposed project does not include any design features that would increase any types of traffic hazards. There would be no impact.

e. During project construction, slow-moving construction vehicles are not anticipated to result in traffic safety hazards. Emergency access in the area would not be affected by project construction because the project requires no temporary lane closures and construction-related traffic would not obstruct the movement of emergency vehicles. This impact is considered less than significant and no mitigation is required.

f. The proposed project complies with policies and goals in the City of Alameda General Plan Transportation Element and Bicycle Master Plan, and therefore would not permanently conflict with

the City of Alameda's policies, plans, or programs regarding public, transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Additionally, as part of the project and in consultation with the BCDC and the City of Alameda, WETA proposes to implement one, or a combination thereof, of three Bay Trail access improvement options to existing pedestrian and street facilities to improve public access and recreational opportunities in and around Alameda Point. Consequently, impacts are considered less than significant.

XVII. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	☐	☐	☒	☐
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental Setting

The Alameda Point water system was constructed by the U.S. Navy to service the NAS. Operations and maintenance service is provided by the East Bay Municipal Utility District (EBMUD) in a joint powers agreement (JPA) with the City of Alameda. Raw water, originating in the Pardee Reservoir on the Mokelumne River, is treated at EBMUD's Prinda filter plant and conveyed via pipeline to Alameda (City of Alameda 2006).

The City of Alameda provides wastewater service to Alameda Point, maintaining 31 sanitary pump plants and operating 127 miles of sanitary sewer lines (City of Alameda 2010). Wastewater flow from Alameda is served by EBMUD's Special District No. 1, which also serves Albany, Berkeley, Emeryville, Oakland, and Piedmont. Wastewater from Alameda is treated at the Main EBMUD wastewater treatment plant (WWTP) located near the San Francisco Bay Bridge. The WWTP was operating at 46% capacity as late as 2000 (City of Alameda 2006).

Storm drainage facilities are managed by the City of Alameda. The City of Alameda maintains 7 storm pump plants and approximately 50 miles of storm pipe. Stormwater is collected and discharged into San Francisco Bay.

Impacts Discussion

a. The proposed project would construct an operations and maintenance facility on Alameda Point to serve WETA's ferry fleet. Project-related wastewater would continue to flow into the City's sewer system and then be conveyed to the WWTP where it would be treated to standards specified in its existing NPDES Permit prior to discharge. Therefore, the proposed project would meet RWQCB's wastewater treatment requirements. There would be no impact.

b. The proposed project is expected to generate between 75,000 to 150,000 gallons of wastewater per week. The Project would not result in the need for construction or expansion of water or wastewater treatment facilities as there exists sufficient capacity in Alameda Point's existing system to accommodate the requirements of the project (Strunk pers. comm. 2010). Additionally, as the project would not encourage population growth, the project would not cause significant environmental effects by increasing the need for the creation of new or the expansion of existing wastewater facilities. As existing wastewater facilities have sufficient capacity to handle the project's wastewater and since the project itself would lead to no increase in population that would create new demand for wastewater facilities, the impact would be less than significant.

c. The proposed project would be served by the City of Alameda's stormwater system. The proposed project would construct a system of new catch basins and pipes which would collect and convey runoff to oil-water separators and treatment vaults (if needed). This water would then be conveyed to the existing 12-inch concrete storm drain line to discharge through the outfall on the site's south side into San Francisco Bay. As the site is already paved, the project would not substantially increase the volume or intensity of storm water runoff through the increase of impervious surfaces. In addition, WETA would explore incorporating a "green roof" which would further lessen stormwater runoff by absorbing and recycling rainwater resulting in less runoff entering the system. Therefore, impacts associated with the provision of stormwater facilities would be less than significant.

d. Water supplies are available on West Hornet Avenue. Potable water use for the project is expected to range between 100,000 and 200,000 gallons per week. This amount includes water to resupply boats, wash boats and equipment, as well as for domestic use by onsite staff and crews. The study area has been historically served by EBMUD and the projected water use is below historical capacity; adequate capacity for future water needs would be determined when project is constructed (McGowan pers. comm. 2010). However, because sufficient water supplies to serve the projected requirements of the project are available on West Hornet Avenue and no new or expanded resources or entitlements are necessary, the impact would be less than significant.

e. The proposed project is expected to generate between 75,000 and 150,000 gallons of wastewater per week. This amount of wastewater would not cause treatment capacity of the wastewater treatment provider to be exceeded because sufficient treatment capacity exists in the WWTP to serve project's demands (Strunk pers. comm. 2010). There would be no impact.

f. Landfill Capacity. The proposed project would generate about 26,000 cubic yards of dredged material during construction and additional material during routine maintenance dredging (once every 5 to 10 years). As part of the project, WETA or its contractor would prepare a soil sampling

program to determine appropriate disposal sites. Dredged material would be disposed in either the San Francisco Deep-Ocean Disposal site (SF-DODS) or the Hamilton Airfield Wetland Restoration Site, which would have sufficient capacity to serve the proposed project.

Between 2,500 and 7,500 cy of excavated material resulting from the installation of the underground vaults and utilities would be disposed of at an approved and licensed facility. In addition, the removal of the seawall would generate approximately 60–90 cy of concrete rubble which would be hauled off for processing as recycled aggregate material. The soil sampling program prepared for the proposed project would identify appropriate disposal location sites, all of which would be required to have sufficient capacity to serve the proposed project.

The project would be served by ocean disposal sites and landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and WETA or its contractor would prepare a soil sampling program. Impacts on landfill capacity are considered less than significant.

g. The proposed project would comply with all pertinent federal, state, and local statutes and regulations regarding the disposal of solid waste generated during construction and operation of the proposed project. There would be no impact.

XVIII. Mandatory Findings of Significance	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a. After incorporating mitigation measures detailed in this document, the proposed project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, eliminate a plant or animal community or to reduce the number or restrict the range of a rare or endangered plant or animal. Contingency measures are proposed in the event of unexpected discoveries of cultural resources, and thus the project would not eliminate important examples of California history or prehistory. The project's impact is less than significant with mitigation.

b. The State CEQA Guidelines define cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines Section 15355[a][b]).

For purposes of this IS, the geographic context for the proposed project's cumulative impact assessment is Alameda Point in the context of the larger San Francisco Bay region. The proposed project's cumulative impacts are discussed relative to the build-out of Alameda Point and the City of Alameda per the General Plan, dredge material management for the entire San Francisco Bay area, the expansion of WETA's ferry service as defined in the Implementation and Operations Plan (IOP), and development of the Bay Trail. As discussed below, the proposed project would not contribute to cumulative impacts that could not be mitigated to less than significant. Therefore, the project's

contribution to cumulative impacts is less than significant with mitigation. For discussion of GHGs and climate change, which is a potential cumulative-impact issue, refer to Section III, *Air Quality*, and Section VII, *Greenhouse Gas Emissions,* wherein the project is found to not contribute considerably to cumulative greenhouse gas emissions.

Build-Out of Alameda Point: Alameda Point is one of the largest undeveloped areas within the San Francisco Bay region and has been slated for redevelopment since 2003 when the City of Alameda approved a separate Alameda Point General Plan Amendment and land use plans for the former NAS. Subsequent master planning efforts have included public parks and open space, neighborhood centers, industrial and manufacturing zones (including marina and maritime businesses), a town center, and multi-modal transportation program in Alameda Point. However, to date no master plan has been approved and the ARRA is currently proceeding with the "Going Forward" process for redevelopment of Alameda Point by building on past planning efforts.

The City's General Plan forecasted by 2020 that the maximum build-out for Alameda Point would total 44,250 square feet of marine-related industry, 430,500 square feet of industrial and warehousing space, and approximately 1,900 additional housing units. By 2025, the population of the City of Alameda is projected to total 87,100 (ABAG 2002). No new homes or businesses are proposed as part of this project. As described above under Section XIII, *Population and Housing*, the projected population growth of the City of Alameda would not be significantly altered by the temporary increase in workers for the construction phase or by the employees needed for the operation of the facility due to the small number of both. Therefore, the project's contribution to cumulative impacts associated with growth of Alameda Point is not expected to be considerable.

Construction of the proposed project would occur before substantial redevelopment of Alameda Point, and therefore any impacts associated with construction activities would not contribute to cumulative effects. However, operation of the proposed project could contribute to cumulative effects as a result of maintenance dredging (once every 5 to 10 years) and requisite fueling and maintenance of WETA's ferry fleet. Build-out of Alameda Point would not require dredging with the possible exception of moving the USS Hornet and/or construction of a new ferry terminal; refer to discussion below on cumulative effects associated with dredge material management for discussion of potential dredging impacts. Ongoing fueling and delivery of hazardous materials (i.e., urea, diesel) at the proposed facility would continue to adhere to all applicable local, state, and federal regulations related to hazardous materials; implementation of the SPCC Plan would ensure that risks to the public and environment would be less than significant. Furthermore, siting the facility at the proposed location would be consistent with the City's General Plan, including the Alameda Point element, and because an approved redevelopment concept for Alameda Point has not yet been approved, any cumulative impacts would be speculative. Therefore, the proposed project's contribution to any cumulative impact related to build-out of Alameda Point would not be considerable, and impacts would be less than significant.

Dredge Material Management in the San Francisco Bay: Dredge material management in the San Francisco Bay includes existing dredging and disposal activities, current and ongoing dredging projects, and the LTMS program for dredge material management. Dredging activities are typically divided into "new" dredging for the purpose of a new project and "maintenance" dredging, which is done on a periodic basis to maintain existing facilities/projects. In 2008, 36 of the projects involved maintenance dredging only and one project, the Port of Oakland Deepening Project, involved both maintenance and new work. The total amount of dredged material for 2008 was estimated at 4.2

million cubic yards[10] (mcy) (USACE 2009). The 2001 LTMS Management Plan established goals to reduce the in-Bay disposal to approximately 1.25 mcy per year. Between the period 2003 to 2006, the overall in-Bay disposal volume target of 2.4 mcy per year was met (USACE 2009). The in-Bay disposal volume target for 2007 through 2009 is 2.01 mcy per year; to date the program is currently meeting its volume targets (USACE 2009).

Dredging required for the proposed project would generate roughly 26,000 cy of new dredged material during initial construction, plus additional material dredged for maintenance (perhaps as often as once every 5 to 10 years). As discussed in Chapter 2, *Project Description,* dredging disposal sites would either be at SF-DODS or Hamilton, depending on the results of the sampling program. Because the amount of dredged material compared with the total estimated by the LTMS program is minimal, there is adequate capacity at potential disposal locations to accommodate a small increase in dredge material, and the proposed project would be required to comply with DMMO regulations, the project's contribution to cumulative impacts related to dredged material management would be less than significant.

Transbay Ferry Expansion: Per Government Code Section 66540.24, the Legislature directed WETA to increase regional mobility through the development and operation of a comprehensive water transit system and its associated landside facilities and adjunct services (WETA 2003). In 2003 WETA completed the IOP and in 2003 certified a program environmental document (Transit EIR) that evaluated potential impacts associated with implementation of the IOP (URS Corporation, 2003). Through preparation of the IOP, WETA developed a program for the development and operation of new ferry routes and terminals within the San Francisco Bay.

Local cumulative impacts were not evaluated in the Transit EIR; however, regional cumulative impacts were analyzed, including dredge management (see discussion above), navigation analysis and projected increases in other vessel traffic on the Bay, air quality (see discussion under Section III, *Air Quality* and Section VII, *Greenhouse Gas Emissions*), transportation and transit forecasts from the Regional Transportation Plan, and transportation energy consumption. The proposed project is part of WETA's transbay ferry expansion program by constructing a centralized facility that serves WETA's ferry fleet, , OCC, and EOC, and therefore was factored into the IOP cumulative analysis; the proposed project would be required to comply with measures and environmental commitments approved in the IOP. Site-specific cumulative impacts associated with the proposed project could also include an increased number of ferry vessel traffic. This traffic increase could result in an increased risk of collision between recreational boaters and ferries; however, there are no recreational marinas in close proximity to the project site and because the project is a maintenance facility, ferry vessel traffic is expected to be limited. Further, because the proposed project is a maintenance facility and not a ferry terminal, any increased roadway traffic would only result from WETA employees traveling to the site, which is expected to be minimal. Therefore, because the proposed project is part of the IOP, and site-specific cumulative impacts are not considerable, the project's contribution to cumulative impacts related to the ferry system as a whole, would be less than significant.

Development of Bay Trail : ABAG prepared the Bay Trail Plan (pursuant to Senate Bill 100) to provide connections to existing park and recreation facilities; create links to existing and proposed transportation facilities; and be planned in such a way as to avoid adverse effects on

[10] Total dredged volume in 2008 excludes the San Francisco Main Ship Channel (MSC) because MSC is not located in the LTMS program area.

environmentally sensitive areas. The Bay Trail currently runs directly adjacent to the proposed project site to the east, and connects to West Hornet Avenue to the north. As part of the project, WETA proposes to implement one, or a combination thereof, of three accessimprovement options to the Bay Trail (i.e., funding for signage/striping, overlook area, sidewalk widening) that would improve public access, recreational opportunities in and around Alameda Point, as well as circumnavigate the secure MARAD facility. Given the improvements proposed for the Bay Trail, and because the project would not impede planning and implementation of extension of the Bay Trail, the proposed project's contribution to cumulative impacts would be less than significant.

c. Because the proposed project would not result in any impacts that could not be mitigated to less than significant, there would be no environmental impacts that would cause substantial adverse direct or indirect effects on human beings. The impact would be less than significant with mitigation.

XIX. Earlier Analysis

Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D).

This Initial Study addresses the potential impacts associated with construction and operation of WETA's proposed Central Bay Operations and Maintenance Facility, which is part of the transbay ferry expansion as defined in WETA's IOP (WETA 2003). The IOP defined a focused set of routes, terminals, and service improvements for expanded ferry service. This Initial Study relies in part on the environmental setting, impacts, and mitigation measures contained in the Final Environmental Impact Report for Expansion of Ferry Transit Service in the San Francisco Bay Area (Transit EIR), which was certified in June 2003 (URS Corporation 2003). As discussed in Section III, *Air Quality*, because the project was included in the emissions analysis for WETA's IOP, the air quality section tiered off of the conclusions presented in the Transit EIR.

Copies of the IOP and the Final EIR are available for review in one of three ways: on WETA's website (http://www.watertransit.org/default.aspx), at one of 20 Bay Area libraries listed on WETA's website, or by requesting a copy from WETA.

Chapter 4
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Appendix A

Air Quality and Climate Change Technical Appendix

Appendix A
Air Quality and Climate Change Technical Appendix

The purpose of this technical appendix is to describe the modeling techniques used to estimate emissions associated with construction and operation of the proposed project.

Project Construction

Criteria Air Pollutants

Construction related emissions from onshore construction equipment and vehicle travel were estimated using the URBEMIS2007, Version 9.2.4 model. URBEMIS2007 analyzes the type of construction equipment used and the duration of the construction period associated with construction of each of the land uses. It was assumed that construction would involve 14 phases, beginning in October 2012 and ending in February 2014. Table A-1 outlines the construction schedule, phases, and associated tasks assumed in the emissions modeling.

Table A-1. Construction Schedule

Phase	Dates	Length (Days)	Task(s)
Phase 1	10/1/12-10/31/12	30	Dredging
Phase 2	2/14/2013-2/28/2013	14	Site Demo and Preparation
Phase 3	2/28/2013-3/30/2013	30	Ground Improvements
Phase 4	3/30/2013-4/29/2013	30	Building Foundation and Construction
Phase 5	4/29/2013-5/31/2013	32	Building Shell
			Site Utility Installation
Phase 6	5/31/2013-6/15/2013	15	Building Shell
			Site Utility Installation
			Bulkhead Removal and Installation
Phase 7	6/15/2013-6/28/2013	13	Building Shell
			Site Utility Installation
			Bulkhead Removal and Installation
			Fixed Pile Installation
Phase 8	6/28/2013-6/29/2013	1	Site Utility Installation
			Bulkhead Removal and Installation
			Fixed Pile Installation
			Marine Pile/Float Installation
Phase 9	6/29/2013-7/28/2013	29	Site Utility Installation
			Fixed Pier Construction
			Marine Pile/Float Installation
Phase 10	7/28/2013-8/27/2013	30	Site Improvements
			Fixed Pier Construction

			Marine Pile/Float Installation
Phase 11	8/27/2013-9/12/2013	16	Fixed Pier Construction
			Marine Pile/Float Installation
			Building Finish Out
Phase 12	9/12/2013-9/27/2013	15	Fixed Pier Construction
			Marine Pile/Float Installation
			Building Finish Out
			Marine Fitting Out and Utility
Phase 13	9/27/2013-1/24/2014	119	Marine Fitting Out and Utility
			Building Finish Out
Phase 14	1/24/2014-2/9/2014	16	Marine Fitting Out and Utility

The site preparation phases (Phases 2 and 3) were assumed to disturb approximately 13.1 acres, with a maximum daily disturbance of 3.3 acres.[1] A total of 7,590 cubic yards of soil were assumed to be exported during this time. URBEMIS model defaults of 20 cubic yard haul truck capacity and 20 miles per round trip was used to estimate the total number of trips required to export the material.

The project applicant provided a detailed summary of construction equipment required to complete each task. Table A-2 summarizes the on-shore equipment assumed in the emissions modeling. Equipment horsepower were based on URBEMIS default values. Please refer to Appendix B for model outputs.

Table A-2. Onshore Equipment Modeling Assumptions by Task

Task	Equipment	Number	Horsepower	Hours/day
Building Finish Out	Support vehicles	5	-[a]	-[a]
Building Foundation and Construction	Drill rig	1	291	10
	Support vehicles	4	-[a]	-[a]
	Backhoe	2	108	8
Building Shell	Backhoe	2	108	8
	Crane	1	399	8
	Support vehicles	5	-[a]	-[a]
Bulkhead Removal and Installation	Backhoe	3	108	8
	Drill rig	1	291	10
	Crane	1	399	10
	Support vehicles	4	-[a]	-[a]
Dredging	None	-	-	-
Fixed Pier Construction	Backhoe	3	108	8
	Crane[b]	1	399	10
	Support vehicles	4	-[a]	-[a]
Fixed Pile Installation	Pile Driver/Derrick	1	500	8
Ground Improvements	Backhoe	3	108	8
	Drill rig	1	291	10
	Crane	1	399	10
	Support vehicles	4	-[a]	-[a]

[1] Includes construction staging area and physical work area.

Task	Equipment	Number	Horsepower	Hours/day
Marine Fitting Out and Utility	Crane	1	399	4
	Support vehicles	4	-[a]	-[a]
Marine Pile/Float Installation	Pile Driver/Derrick	1	500	8
Site Demo and Preparation	Backhoe	3	108	8
	Excavator	1	168	8
	Support vehicles	4	-[a]	-[a]
Site Improvements	Backhoe	3	108	8
	Support vehicles	4	-[a]	-[a]
Site Utility Installation	Backhoe	3	108	8
	Support vehicles	4	-[a]	-[a]
	Crane	1	399	10

[a] Assumed the support vehicles would be gasoline powered and make two five-mile round trips per day.
[b] Crane will be used 25% of working days
Source: Scott pers. comm.

The Dredging, Fixed Pile Installation, Marine Pile/Float Installation, and Marine Fitting Out and Utility tasks will require the use of tugs, workboats, and/or dredgers. URBEMIS does not estimate emissions associated with these pieces of equipment. Consequently, operating assumptions provided by the project applicant (Table A-3) and emissions factors obtained from ICF's *Current Methodologies in Preparing Mobile Source Prot-Related Emissions* (2009) (Table A-4) were used to quantify emissions from the tug, workboat, and dredge. It was assumed that all engines would be diesel and EPA certified Tier II.

Table A-3. In-Water Equipment Assumptions

Phase	Equipment	Horsepower (kW)[a]	Load Factor[b]	Hours/day
Dredging	Support boat [c]	50 (37)	0.43	4
	Dredge	600 (448)	0.69	8
	Tug [d]	900 (671)	0.31	4
Fixed Pile Installation	Work/Support boat [c]	50 (37)	0.43	8
	Tug [d]	900 (671)	0.31	4
Marine Pile/Float Installation and Marine Fitting Out and Utility	Work/Support boat [c]	50 (37)	0.43	8

[a] Calculated by multiplying the horsepower by 0.746
[b] ICF International 2009
[c] This is an outboard engine utility boat
[d] The tug will be on call and used occasionally.
Source: Scott pers. comm.

Table A-4. Emission Factors for Category II Marine Diesel Engines (grams per kilowatt-hour [kWh])

Engine Power (kW)	VOC	NO_X	CO	PM	SO_2[a]	CO_2[b]	N_2O[b]	CH_4[b]
37	0.27	6.8	5	0.4	0.21	690	0.02	0.09
75	0.27	6.8	5	0.3	0.21	690	0.02	0.09
130	0.27	6.8	5	0.3	0.21	690	0.02	0.09
225	0.27	6.8	5	0.3	0.21	690	0.02	0.09
450	0.27	6.8	5	0.3	0.21	690	0.02	0.09
560	0.27	6.8	5	0.3	0.21	690	0.02	0.09
1,000	0.27	6.8	5	0.3	0.21	690	0.02	0.09

[a] Based on EPA emission standard of 500 parts per million sulfur content of marine diesel fuel. Calculated using the following equation: (500 grams S/1,000,000 grams fuel) X (210 grams fuel/kW-hour) X (2 grams SO_2/grams S).
[b] Discussed below in the GHG section.
Sources: ICF International 2009, Clean Air Task Force n.d.

Total emissions for each piece of equipment were calculated using the information summarized in Tables A-3 and A-4 and Equation A-1. Emissions were added to the on-shore equipment emissions calculated by URBEMIS to estimate total emissions associated with each phase.

Equation A -1 ***E= (Activity*kW) X (EF) X (LF) X (Hours/day) X 0.002204***

Where:

E	= Emissions, pounds per day
Activity	= Daily Activity, total hours (see Table A-3)
EF	= Engine emissions factor (see Table A-4)
LF	=Engine load factor (see Table A-3)
kW	= Engine kW (see Table A-3)
Hours/day	= Equipment operating time (see Table A-3)
0.000001	= Conversation from grams to pounds

Greenhouse Gases

GHG emissions from construction activities are primarily the result of fuel use by equipment, boats, and vehicles. The primary GHG emissions generated by construction activities are carbon dioxide (CO_2), methane (CH_4), and nitrous oxides (N_2O).

CO_2 emissions from onshore construction equipment and vehicle use were estimated using URBEMIS2007 and the assumptions described above. URBEMIS does not quantify CH_4 and N_2O emissions from off-road equipment or worker commutes. Emissions of CH_4 and N_2O from diesel equipment were determined by scaling the construction CO_2 emissions predicted by URBEMIS by the ratio CH_4/CO_2 (0.000057) and N_2O/CO_2 (0.000026) emissions expected per gallon of diesel fuel according to CCAR (California Climate Action Registry 2009). GHG emissions from on road pickup trucks were determined by dividing the annual CO_2 emissions by 0.95. This statistic is based on EPA's recommendation that CH_4, N_2O, and other GHG emissions account for 5% of on road emissions (U.S. Environmental Protection Agency 2009).

Emissions of CO_2, CH_4, and N_2O from operation of boats and dredges were estimated using Equation A-1 and the emission factors and operating assumptions summarized in Tables A-3 and A-4.

In order to simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method to compare GHG emissions is the "global warming potential" (GWP) methodology defined in the Intergovernmental Panel on Climate Change (IPCC) reference documents (IPCC 1996 and 2001). The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2 equivalents (CO_2e), which compares the gas in question to that of the same mass of CO_2 (CO_2 has a GWP of 1 by definition).

Table A-5 lists the GWP of CO_2 CH_4, N_2O, their lifetimes, and abundances in the atmosphere in parts per trillion (ppt).

Table A-5. Lifetimes and Global Warming Potentials of CO_2, CH_4, and N_2O

GHG	Global Warming Potential (100 years)	Lifetime (years)	1998 Atmospheric Abundance (ppt)[a]
CO_2	1	50–200	365,000,000
CH_4	21	9–15	1,745
N_2O	310	120	314

Notes:
[a] 1 ppt is a mixing ratio unit indicating the concentration of a pollutant in parts per trillion by volume.
Source: Intergovernmental Panel on Climate Change 1996, 2001 (pages 388-390)

Project Operations

Criteria Pollutants

The maintenance facility will employ a maximum of 58 people. Emissions associated with employee commutes were modeled using the URBEMIS 2007 model. It was assumed that each employee would make two trips to the facility per day and work an average of 250 days per year. Trips distances were based on URBMIES model defaults.

Fuel will be delivered to the facility using heavy-duty diesel powered haul trucks. A maximum of 40,000 gallons of diesel will be delivered every 14-21 days and 7,000 gallons of lube oil and urea will be delivered monthly. It was assumed that a 9,000 gallon haul truck would be used to deliver the fuel, resulting in a total of nine round-trip delivery trips per month. Emissions associated with these vehicle trips were modeled using URBEMIS 2007. A hauling distance of 20 miles was assumed. Operation of a 25 horsepower fueling pump was also estimated using URBEMIS 2007. The pump was assumed to operate eight hours per day, five days per week.

Channel maintenance will occur once every five to ten years and require the use of one crane and tugboat. It was assumed the crane would only operate for 12 hours during the maintenance work. The tug will be required to transport excavated material to the SF-DODS and move the crane. A conservative operative assumption of 12 hours was assumed for the tug.[2] Emissions associated with the crane were estimated using URBMEIS and emissions associated with the tug were estimated using the Equation A-1 and the emission factors presented in Table A-4.

Routine upkeep of the Landside facility was assumed to occur on an ongoing basis. In addition, it was assumed the facility would utilize natural gas for heating. Emissions associated with the application of exterior coatings and natural gas consumption were estimated using URBMEIS 2007. The landslide facility was assumed to be 21,210 square feet.

Greenhouse Gases

Emissions from employee commutes, fuel hauling, channel maintenance, facility upkeep, and natural gas use were estimated using the assumptions described above.

Operation of the project is expected to use 15,000 kWh of electricity per day, or 5.475 million kWh per year. Alameda Power, which supplies electricity to the project does not have third party verified GHG emissions factors. However, because approximately 63% of Alameda Power's energy supply mix originates from renewable sources, use of statewide GHG emission factors, which contain approximately 2% renewable energy, would overestimate emissions (Alameda Municipal Power 2010). Consequently, GHG emission factors for Alameda Power were calculated using the utilities' 2009 power supply mix[3] and data obtained from the ARB (Alameda Municipal Power 2010; California Air Resources Board 2008). Table A-6 outlines the data and assumptions used to calculate the emission factors.

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[2] It is more likely the tug will operate for half this time as its primary function will be for the movement of the dredge.

[3] Energy supply consists of the following. Only those sources noted with italics emit GHG emission. *Biomass* (17%), Geothermal (38%), Small Hydroelectric (1%), Solar (<1%), Wind (7%), *Coal* (6%), Large Hydroelectric (20%), *Natural Gas* (10%), and Nuclear (10%)

Table A-6. Electricity Generation Emission Factors for Alameda Power (grams per kWh)

Power Source	Percent of Power Mix[a]	Emissions Data[b]	Conversion Factors[c]
CO_2 Emission Factor			
Biomass[d], Hydroelectric, Solar, Wind, Geothermal, Nuclear	84	Zero	-
Coal	6	2.1 million grams CO_2 = 1 ton of coal	(1) 1 ton of coal = 19 million Btu; (2) 3,412 Btu = 1 kWh
Natural Gas	10	54.1 grams of CO_2 = 1 cubic foot of natural gas	(2); (3) 1 cubic foot = 1,027 Btu
CH_4 Emission Factor			
Hydroelectric, Solar, Wind, Geothermal, Nuclear	67	Zero	-
Biomass	17	424 grams of CH_4 = 1 ton of biomass	(2); (4) 1 pound of biomass = 8,600 Btu
Coal	6	22.6 grams CH_4 = 1 ton of coal	(1); (2)
Natural Gas	10	0.0010 grams of CH_4 = 1 cubic foot of natural gas	(2); (3)
N_2O Emission Factor			
Hydroelectric, Solar, Wind, Geothermal, Nuclear	67	Zero	-
Biomass	17	56.5 grams of N_2O = 1 ton of biomass	(2); (4)
Coal	6	34.0 grams N_2O = 1 ton of coal	(1); (2)
Natural Gas	10	0.0001 grams of N_2O = 1 cubic foot of natural gas	(2); (3)

[a] Alameda Municipal Authority 2010
[b] California Air Resources Board 2008
[c] Energy Information Administration 2002 and 2010
[d] CO_2 emission from biomass are considered biogenic and are therefore not included in the emission factor calculations.

GHG emissions associated with the generation of electricity were estimated by multiplying the expected annual electricity usage by the calculated emission factors presented in Table A-7.

Table A-7. Electricity Generation Emission Factors for Alameda Power (grams per kWh)[a]

CO_2	CH_4	N_2O
39.667	0.015	0.002

[a] See Table A-5 for emissions calculations details

GHG emissions associated with water importation were calculated using an energy intensity factor for the amount energy required to move an acre-foot of water (Department of Water Resources 2007). The California Department of Water Resources' (DWR) *Bulletin132-06: Management of the California State Water Project* (Bulletin 132-06) lists the cumulative energy use, including losses, for the South Bay Pumping Plant as 1,165 kWh/acre-foot. This factor was multiplied by the amount of water imported to the facility, which was assumed to be 200,000 gallons per week, or 10.4 million gallons per year. The resulting energy usage was multiplied by GHG emission factors for electricity generation presented in Table A-6.

Fugitive GHG emissions associated with wastewater treatment were calculated according to the ARB's *Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories*, Version 1.1 (LGOP Protocol) (2010). The following equations from the LGOP Protocol were used to CH_4 and N_2O emissions[4]. Note that because site-specific information on digester gas production and effluent nitrogen loads was unavailable, default factors were utilized

Equation A -2 $$E = (P * \text{Digester Gas} * FC_{H4} * p[CH_4] * [1-DE] * 0.0283 * 365.25 * 10^{-6}) X 21$$

Where:

E	= CH_4 Emissions, metric tons per year
P	= Population of the maintenance facility, 58 staff members
Digester Gas	= Cubic feet of digester gas produced per person per day, LGOP default of 1
FC_H	= Fraction of CH4 in digester gas, 0.65
$p[CH_4]$	= Density of methane, 662.00 grams per meter cubed
DE	= CH_4 Destruction Efficiency, 0.99
0.0283	= Conversion factor from cubic feet to meters cubed
365.25	= Conversion factor from days to year
10^-6	= Conversion factor from grams to metric tons
21	= GWP of CH_4

Equation A -3 $$E = (P * F_{ind\text{-}com}) X (\text{Total N Load} - \text{N uptake} * \text{BOD load}) * \text{EF effluent} * 44/28 * (1 - \text{F plant nit/denit}) * 365.25 X 10\text{-}3) * 310$$

Where:

E	= N_2O Emissions, metric tons per year
P	= Population of the maintenance facility, 58 staff members
$F_{ind\text{-}com}$	= Factor for industrial and commercial co-discharge waste into the sewer system, LGOP default of 1.25
Total N Load	= Total nitrogen (N) load, 0.026 kilograms per person per day
N uptake	= Nitrogen uptake for cell growth in aerobic system, 0.005 kilograms of nitrogen per kilogram of biological oxygen (BOG) demand
BOD5 load	= amount of BOD produced per person per day, 0.090

[4] Based on guidance from the ARB (2010), CO_2 emissions were not included in the emissions analysis as they are considered biogenic.

EF effluent	= Emission factor, 0.005 kg N_2O -N/kg sewage-N produced
44/28	= molecular weight ratio of N_2O to nitrogen dioxide, 1.57
Plant nit/denit	= fraction of N removed for the centralized WWTP with nitrification/denitrification, 0.7
365.25	= Conversion factor from days to year
10^-6	= Conversion factor from grams to metric tons
310	= GWP of N_2O

Berthing at the new facility is expected to slightly reduce vessel deadhead times relative to existing conditions. Table A-7 outlines the projected travel times and vessel information for the central bay fleet under existing conditions and the proposed project (Gougherty pers. comm.). GHG emissions associated with vessel movement were estimated using emission factors summarized in Table A-4. It was assumed all vessels would be powered by a Category 1 Tier 2 engines. Equation A-1 was used to calculate emissions.

Table A-7. Ferry Movement Data

Ferry Name[a]	Weekday Travel (min)	Annual Travel (min)[b]	Annual Travel (hour)
Existing Conditions			
Peralta	80	20,800	347
Encinal/Bay Breeze	80	20,800	347
Gemini/Pieces	60	15,600	260
Taurus	160	41,600	693
Scorpio	160	41,600	693
n/a[c]	75	19,500	325
n/a[c]	75	19,500	325
Total	**690**	**179,400**	**2,990**
Proposed Project			
Peralta	80	20,800	347
Encinal/Bay Breeze	80	20,800	347
Gemini/Pieces	76	19,760	329
Taurus	90	23,400	390
Scorpio	90	23,400	390
n/a[c]	100	26,000	433
n/a[c]	100	26,000	433
Total	**616**	**160,160**	**2,669**

[a] All ferries assumed to have a horsepower and load factor of 2,400 and 0.42, respectively (Gougherty pers. comm.; ICF International 2009)
[b] Weekday Travel * 5 days per week * 52 weeks per year
[c] Future vessel; name unavailable.

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Personal Communications

Gougherty, Michael. Planner/Analyst. Water Emergency Transportation Authority, San Francisco, CA. October 18, 2010—Email message to Laurie Karlinsky, ICF International.

Scott, Lamar. Principal. KPFF Consulting Engineers, Seattle, WA. January 26, 2011—Email message to Dustin Joseph, ICF International.

Unmitigated Construction URBEMIS Outputs

1/27/2011 7:53:49 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 8.urb924

Project Name: WETA Phase 8

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	7.28	62.71	30.45	0.00	0.00	2.98	2.98	0.00	2.74	2.74	9,717.08

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 6/28/2013-6/28/2013 Active Days: 1	**7.28**	**62.71**	**30.45**	**0.00**	**0.00**	**2.98**	**2.98**	**0.00**	**2.74**	**2.74**	**9,717.08**
Building 06/28/2013-06/29/2013	7.28	62.71	30.45	0.00	0.00	2.98	2.98	0.00	2.74	2.74	9,717.08
Building Off Road Diesel	7.28	62.71	30.45	0.00	0.00	2.98	2.98	0.00	2.74	2.74	9,717.08
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 6/28/2013 - 6/29/2013 - Site Utility Installation and Bulkhead removal and install and Fixed pile install and Marine pile/float install

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 10 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

2 Other Equipment (500 hp) operating at a 0.62 load factor for 8 hours per day

6 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.08	0.09	0.91	0.00	0.14	0.03	81.53
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

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Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		16.00	1000 sq ft	1.00	16.00	80.00
					16.00	80.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 7.urb924

Project Name: WETA Phase 7

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	7.86	64.26	33.64	0.00	0.00	3.34	3.34	0.00	3.07	3.07	9,369.90

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 6/17/2013-6/28/2013 Active Days: 10	**7.86**	**64.26**	**33.64**	**0.00**	**0.00**	**3.34**	**3.34**	**0.00**	**3.07**	**3.07**	**9,369.90**
Building 06/15/2013-06/28/2013	7.86	64.26	33.64	0.00	0.00	3.34	3.34	0.00	3.07	3.07	9,369.90
Building Off Road Diesel	7.86	64.26	33.64	0.00	0.00	3.34	3.34	0.00	3.07	3.07	9,369.90
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 6/15/2013 - 6/28/2013 - Building Shell and Site Utility Installation and Bulkhead removal and install and Fixed pile install

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 10 hours per day

3 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Other Equipment (500 hp) operating at a 0.62 load factor for 8 hours per day

8 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.12	0.15	1.48	0.00	0.22	0.04	132.48
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

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Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		26.00	1000 sq ft	1.00	26.00	130.00
					26.00	130.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 6.urb924

Project Name: WETA Phase 6

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	6.76	52.73	29.65	0.00	0.00	2.96	2.96	0.00	2.72	2.72	7,443.47

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/31/2013-6/14/2013 Active Days: 11	**6.76**	**52.73**	**29.65**	**0.00**	**0.00**	**2.96**	**2.96**	**0.00**	**2.72**	**2.72**	**7,443.47**
Building 05/31/2013-06/15/2013	6.76	52.73	29.65	0.00	0.00	2.96	2.96	0.00	2.72	2.72	7,443.47
Building Off Road Diesel	6.76	52.73	29.65	0.00	0.00	2.96	2.96	0.00	2.72	2.72	7,443.47
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 5/31/2013 - 6/15/2013 - Building Shell and Site Utility Installation and Bulkhead removal and install

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 10 hours per day

3 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

8 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.12	0.15	1.48	0.00	0.22	0.04	132.48
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

1/27/2011 7:50:53 AM

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		26.00	1000 sq ft	1.00	26.00	130.00
					26.00	130.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 5.urb924

Project Name: WETA Phase 5

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	3.47	26.11	15.50	0.00	0.00	1.63	1.63	0.00	1.50	1.50	3,116.21

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

1/27/2011 7:49:19 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 4/29/2013-5/31/2013 Active Days: 25	**3.47**	**26.11**	**15.50**	**0.00**	**0.00**	**1.63**	**1.63**	**0.00**	**1.50**	**1.50**	**3,116.21**
Building 04/29/2013-05/31/2013	3.47	26.11	15.50	0.00	0.00	1.63	1.63	0.00	1.50	1.50	3,116.21
Building Off Road Diesel	3.47	26.11	15.50	0.00	0.00	1.63	1.63	0.00	1.50	1.50	3,116.21
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 4/29/2013 - 5/31/2013 - Building Shell and Site Utility Installation

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

5 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.09	0.10	1.03	0.00	0.16	0.03	91.72
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

Operational Settings:

1/27/2011 7:49:19 AM

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		18.00	1000 sq ft	1.00	18.00	90.00
					18.00	90.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

1/27/2011 7:49:19 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/27/2011 7:47:38 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 4.urb924

Project Name: WETA Phase 4

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	1.74	13.52	8.11	0.00	0.00	0.72	0.72	0.00	0.66	0.66	2,705.75

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

1/27/2011 7:47:38 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 4/1/2013-4/29/2013 Active Days: 21	**1.74**	**13.52**	**8.11**	**0.00**	**0.00**	**0.72**	**0.72**	**0.00**	**0.66**	**0.66**	**2,705.75**
Building 03/30/2013-04/29/2013	1.74	13.52	8.11	0.00	0.00	0.72	0.72	0.00	0.66	0.66	2,705.75
Building Off Road Diesel	1.74	13.52	8.11	0.00	0.00	0.72	0.72	0.00	0.66	0.66	2,705.75
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 3/30/2013 - 4/29/2013 - Building Foundation and Const

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 10 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.04	0.05	0.46	0.00	0.07	0.01	40.76
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

Operational Settings:

1/27/2011 7:47:38 AM

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		8.00	1000 sq ft	1.00	8.00	40.00
					8.00	40.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

1/27/2011 7:47:38 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/27/2011 9:50:13 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\WETA Central Bay Maintenance and Operations Facility\NEW Construction Analysis\URBEMIS\Phase 3.urb924

Project Name: WETA Phase 3

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	3.47	30.87	15.47	0.01	66.05	1.49	67.53	13.80	1.37	15.17	5,346.50

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

1/27/2011 9:50:13 AM

Time Slice 2/28/2013-3/29/2013 Active Days: 22	**3.47**	**30.87**	**15.47**	**0.01**	**66.05**	**1.49**	**67.53**	**13.80**	**1.37**	**15.17**	**5,346.50**
Building 02/28/2013-03/30/2013	2.98	23.70	13.06	0.00	0.00	1.23	1.23	0.00	1.13	1.13	3,957.53
Building Off Road Diesel	2.98	23.70	13.06	0.00	0.00	1.23	1.23	0.00	1.13	1.13	3,957.53
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 02/28/2013-03/30/2013	0.49	7.17	2.40	0.01	66.05	0.26	66.31	13.80	0.24	14.04	1,388.97
Mass Grading Dust	0.00	0.00	0.00	0.00	66.00	0.00	66.00	13.78	0.00	13.78	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.49	7.17	2.40	0.01	0.05	0.26	0.31	0.02	0.24	0.25	1,388.97
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Mass Grading 2/28/2013 - 3/30/2013 - Hauling Emissions

Total Acres Disturbed: 13.1

Maximum Daily Acreage Disturbed: 3.3

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 345

Off-Road Equipment:

Phase: Building Construction 2/28/2013 - 3/30/2013 - Ground Improvements

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 10 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1/27/2011 9:50:13 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.04	0.05	0.46	0.00	0.07	0.01	40.76
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		8.00	1000 sq ft	1.00	8.00	40.00
					8.00	40.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0

1/27/2011 9:50:13 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/27/2011 9:45:34 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\WETA Central Bay Maintenance and Operations Facility\NEW Construction Analysis\URBEMIS\Phase 2.urb924

Project Name: WETA Phase 2

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	2.89	27.37	14.75	0.03	66.10	1.49	67.59	13.82	1.37	15.19	4,307.41

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

1/27/2011 9:45:34 AM

Time Slice 2/14/2013-2/28/2013 Active Days: 11	2.89	27.37	14.75	0.03	66.10	1.49	67.59	13.82	1.37	15.19	4,307.41
Building 02/14/2013-02/28/2013	1.91	13.02	9.95	0.00	0.00	0.98	0.98	0.00	0.90	0.90	1,529.47
Building Off Road Diesel	1.91	13.02	9.95	0.00	0.00	0.98	0.98	0.00	0.90	0.90	1,529.47
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 02/14/2013-02/28/2013	0.98	14.35	4.81	0.03	66.10	0.52	66.61	13.82	0.48	14.29	2,777.95
Mass Grading Dust	0.00	0.00	0.00	0.00	66.00	0.00	66.00	13.78	0.00	13.78	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.98	14.35	4.81	0.03	0.10	0.52	0.61	0.03	0.48	0.51	2,777.95
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Mass Grading 2/14/2013 - 2/28/2013 - Hauling Emissions

Total Acres Disturbed: 13.1

Maximum Daily Acreage Disturbed: 3.3

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 690

Off-Road Equipment:

Phase: Building Construction 2/14/2013 - 2/28/2013 - Site Demo and Prep

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1/27/2011 9:45:34 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.04	0.05	0.46	0.00	0.07	0.01	40.76
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		8.00	1000 sq ft	1.00	8.00	40.00
					8.00	40.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0

1/27/2011 9:45:34 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/26/2011 2:07:14 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Phase 14.urb924

Project Name: WETA Phase 14

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	0.30	2.66	1.01	0.00	0.00	0.09	0.09	0.00	0.08	0.08	369.73

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

1/26/2011 2:07:14 PM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/24/2014-2/7/2014 Active Days: 11	**0.30**	**2.66**	**1.01**	**0.00**	**0.00**	**0.09**	**0.09**	**0.00**	**0.08**	**0.08**	**369.73**
Building 01/24/2014-02/09/2014	0.30	2.66	1.01	0.00	0.00	0.09	0.09	0.00	0.08	0.08	369.73
Building Off Road Diesel	0.30	2.66	1.01	0.00	0.00	0.09	0.09	0.00	0.08	0.08	369.73
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 1/24/2014 - 2/9/2014 - Marine Fitting Out

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.04	0.05	0.46	0.00	0.07	0.01	40.76
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

Operational Settings:

1/26/2011 2:07:14 PM

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		8.00	1000 sq ft	1.00	8.00	40.00
					8.00	40.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/27/2011 8:10:11 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 13.urb924

Project Name: WETA Phase 13

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	0.32	2.92	1.09	0.00	0.00	0.11	0.11	0.00	0.10	0.10	369.73
2014 TOTALS (lbs/day unmitigated)	0.30	2.66	1.01	0.00	0.00	0.09	0.09	0.00	0.08	0.08	369.73

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

1/27/2011 8:10:11 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/27/2013-12/31/2013 Active Days: 68	**0.32**	**2.92**	**1.09**	**0.00**	**0.00**	**0.11**	**0.11**	**0.00**	**0.10**	**0.10**	**369.73**
Building 09/27/2013-01/01/2014	0.32	2.92	1.09	0.00	0.00	0.11	0.11	0.00	0.10	0.10	369.73
Building Off Road Diesel	0.32	2.92	1.09	0.00	0.00	0.11	0.11	0.00	0.10	0.10	369.73
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 1/1/2014-1/1/2014 Active Days: 1	0.30	2.66	1.01	**0.00**	**0.00**	0.09	0.09	**0.00**	0.08	0.08	**369.73**
Building 09/27/2013-01/01/2014	0.30	2.66	1.01	0.00	0.00	0.09	0.09	0.00	0.08	0.08	369.73
Building Off Road Diesel	0.30	2.66	1.01	0.00	0.00	0.09	0.09	0.00	0.08	0.08	369.73
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 9/27/2013 - 1/1/2014 - Marine Fitting Out and Utility and Building Finish Out

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

1/27/2011 8:10:11 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.09	0.10	1.03	0.00	0.16	0.03	91.72
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		18.00	1000 sq ft	1.00	18.00	90.00
					18.00	90.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0

1/27/2011 8:10:11 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/27/2011 8:12:49 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 12.urb924

Project Name: WETA Phase 12

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	4.00	34.78	16.12	0.00	0.00	1.63	1.63	0.00	1.50	1.50	4,757.45

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

1/27/2011 8:12:49 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/12/2013-9/27/2013 Active Days: 12	**4.00**	**34.78**	**16.12**	**0.00**	**0.00**	**1.63**	**1.63**	**0.00**	**1.50**	**1.50**	**4,757.45**
Building 09/12/2013-09/27/2013	4.00	34.78	16.12	0.00	0.00	1.63	1.63	0.00	1.50	1.50	4,757.45
Building Off Road Diesel	4.00	34.78	16.12	0.00	0.00	1.63	1.63	0.00	1.50	1.50	4,757.45
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 9/12/2013 - 9/27/2013 - Fixed pile Const and Marine pile/float install and Building Finish Out and Marine Fitting and Utility

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Other Equipment (500 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.12	0.15	1.48	0.00	0.22	0.04	132.48
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

1/27/2011 8:12:49 AM

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		26.00	1000 sq ft	1.00	26.00	130.00
					26.00	130.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0

1/27/2011 8:12:49 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/27/2011 8:12:28 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 11.urb924

Project Name: WETA Phase 11

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	3.20	27.49	13.40	0.00	0.00	1.37	1.37	0.00	1.26	1.26	3,833.13

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

1/27/2011 8:12:28 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 8/27/2013-9/12/2013 Active Days: 13	**3.20**	**27.49**	**13.40**	**0.00**	**0.00**	**1.37**	**1.37**	**0.00**	**1.26**	**1.26**	**3,833.13**
Building 08/27/2013-09/12/2013	3.20	27.49	13.40	0.00	0.00	1.37	1.37	0.00	1.26	1.26	3,833.13
Building Off Road Diesel	3.20	27.49	13.40	0.00	0.00	1.37	1.37	0.00	1.26	1.26	3,833.13
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 8/27/2013 - 9/12/2013 - Fixed pile Const and Marine pile/float install and Building Finish Out

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Other Equipment (500 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.09	0.10	1.03	0.00	0.16	0.03	91.72
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

1/27/2011 8:12:28 AM

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		18.00	1000 sq ft	1.00	18.00	90.00
					18.00	90.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0

1/27/2011 8:12:28 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

1/27/2011 8:11:44 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 10.urb924

Project Name: WETA Phase 10

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	4.52	36.15	20.09	0.00	0.00	2.09	2.09	0.00	1.92	1.92	4,815.50

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

1/27/2011 8:11:44 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 7/29/2013-8/27/2013 Active Days: 22	**4.52**	**36.15**	**20.09**	**0.00**	**0.00**	**2.09**	**2.09**	**0.00**	**1.92**	**1.92**	**4,815.50**
Building 07/28/2013-08/27/2013	4.52	36.15	20.09	0.00	0.00	2.09	2.09	0.00	1.92	1.92	4,815.50
Building Off Road Diesel	4.52	36.15	20.09	0.00	0.00	2.09	2.09	0.00	1.92	1.92	4,815.50
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 7/28/2013 - 8/27/2013 - Site Improvements and Fixed pile Const and Marine pile/float install

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Other Equipment (500 hp) operating at a 0.62 load factor for 8 hours per day

6 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.08	0.09	0.91	0.00	0.14	0.03	81.53
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

1/27/2011 8:11:44 AM

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		16.00	1000 sq ft	1.00	16.00	80.00
					16.00	80.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0

1/27/2011 8:11:44 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\URBEMIS\Phase 9.urb924

Project Name: WETA Phase 9

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	5.32	43.45	22.81	0.00	0.00	2.36	2.36	0.00	2.17	2.17	5,739.83

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

1/27/2011 8:10:59 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 7/1/2013-7/26/2013 Active Days: 20	**5.32**	**43.45**	**22.81**	**0.00**	**0.00**	**2.36**	**2.36**	**0.00**	**2.17**	**2.17**	**5,739.83**
Building 06/30/2013-07/28/2013	5.32	43.45	22.81	0.00	0.00	2.36	2.36	0.00	2.17	2.17	5,739.83
Building Off Road Diesel	5.32	43.45	22.81	0.00	0.00	2.36	2.36	0.00	2.17	2.17	5,739.83
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Building Construction 6/30/2013 - 7/28/2013 - Site Utility Installation and Fixed pile Const and Marine pile/float install

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Other Equipment (500 hp) operating at a 0.62 load factor for 8 hours per day

6 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	0.08	0.09	0.91	0.00	0.14	0.03	81.53
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

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Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		16.00	1000 sq ft	1.00	16.00	80.00
					16.00	80.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				100.0	0.0	0.0

Mitigation AQ-3 Construction Schedule and Mitigated URBEMIS Outputs

Phase	Date	Task	Days
Phase 1	10/1/12-10/31/12	Dredging	30
Phase 2	1/14/2013-1/28/2013	Site Demo and Prep	14
Phase 3	1/28/2013-2/27/2013	Ground Improvements	30
Phase 4	2/27/2013-3/29/2013	Building Foundation and Const	30
Phase 5	3/29/2013-5/28/2013	Building Shell	60
		Site Utility Installation	60
Phase 6	5/29/2013-5/30/2013	Site Utility Installation	1
Phase 7	5/30/2013-6/14/2013	Site Utility Installation	15
		Bulkhead removal and install	15
Phase 8	6/14/2013-6/27/2013	Site Utility Installation	13
Phase 9	6/27/2013-7/11/2013	Bulkhead removal and install	14
		Fixed pile install	14
Phase 10	7/11/2013-7/12/2013	Marine pile/float install	1
		Site Utility Installation	1
		Site Improvements	1
Phase 11	7/12/2013-8/10/2013	Site Improvements	29
		FIXED PIER CONST	29
		Marine pile/float install	29
Phase 12	8/10/2013-9/25/2013	Building Finish Out	46
		FIXED PIER CONST	46
		Marine pile/float install	46
Phase 13	9/25/2013-10/10/2013	Building Finish Out	15
		FIXED PIER CONST	15
		Marine pile/float install	15
		Marine Fitting Out and Utility	15
Phase 14	10/10/2013-1/7/2014	Marine Fitting Out and Utility	89
		Building Finish Out	89
Phase 15	1/7/2014-2/22/2014	Marine Fitting Out and Utility	46

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 13 Mitigated.urb924

Project Name: WETA Phase 13 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	4.00	34.78	16.12	0.00	0.00	1.63	1.63	0.00	1.50	1.50	4,757.45

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.15	1.48	0.00	0.22	0.04	132.48

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 12 Mitigated.urb924

Project Name: WETA Phase 12 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	3.20	27.49	13.40	0.00	0.00	1.37	1.37	0.00	1.26	1.26	3,833.13

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 11 Mitigated.urb924

Project Name: WETA Phase 11 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	4.52	36.15	20.09	0.00	0.00	2.09	2.09	0.00	1.92	1.92	4,815.50

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 10 Mitigated.urb924

Project Name: WETA Phase 10 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	4.52	36.15	20.09	0.00	0.00	2.09	2.09	0.00	1.92	1.92	4,815.50

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 9 Mitigated.urb924

Project Name: WETA Phase 9 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	4.07	35.23	17.05	0.00	0.00	1.61	1.61	0.00	1.48	1.48	5,883.95

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 8 Mitigated.urb924

Project Name: WETA Phase 8 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	2.11	15.96	9.41	0.00	0.00	0.99	0.99	0.00	0.91	0.91	1,906.70

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 7 Mitigated.urb924

Project Name: WETA Phase 7 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	5.09	39.66	22.47	0.00	0.00	2.21	2.21	0.00	2.04	2.04	5,864.23

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.08	0.09	0.91	0.00	0.14	0.03	81.53

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 6 Mitigated.urb924

Project Name: WETA Phase 6 Mitigated

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	2.11	15.96	9.41	0.00	0.00	0.99	0.99	0.00	0.91	0.91	1,906.70

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 14 Mitigated.urb924

Project Name: WETA Phase 14 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	0.32	2.92	1.09	0.00	0.00	0.11	0.11	0.00	0.10	0.10	369.73

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.09	0.10	1.03	0.00	0.16	0.03	91.72

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Mitigated\Phase 15 Mitigated.urb924

Project Name: WETA Phase 15 Mitiagted

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	0.30	2.66	1.01	0.00	0.00	0.09	0.09	0.00	0.08	0.08	369.73

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.46	0.00	0.07	0.01	40.76

Appendix B

Special Status Species with Potential to Occur in the Study Area

Common and Scientific Names	Status[a] Federal/ State/CNPS	Distribution	Preferred Habitats	Blooming Period	Potential for Occurrence in the Study Area
Bent-flowered fiddleneck *Amsinckia lunaris*	–/–/1B.2	Inner North Coast Ranges, San Francisco Bay Area, west-central Great Valley	Coastal bluff scrub, valley and foothill grasslands, cismontane woodlands; 10–1,650 feet	March–June	No suitable habitat present in study area
Alkali milk-vetch *Astragalus tener var. tener*	–/–/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay Area	Playas, on adobe clay in valley and foothill grassland, vernal pools on alkaline soils; below 200 feet	March–June	No suitable habitat present in study area
San Joaquin spearscale *Atriplex joaquiniana*	–/–/1B.2	West edge of Central Valley from Glenn to Tulare Counties	Alkali grassland, alkali meadow, alkali scrub, and saltbush scrub, below 2,750 feet	April–October	No suitable habitat present in study area
Round-leaved filaree *California macrophyllum*	–/–/1B.1	Scattered occurrences in the Great Valley, southern North Coast Ranges, San Francisco Bay Area, South Coast Ranges, Channel Islands, Transverse Ranges, and Peninsular Ranges	Cismontane woodland, valley and foothill grassland on clay soils; 50–3,950 feet	March–May	No suitable habitat present in study area
Bristly sedge *Carex comosa*	–/–/2.1	Scattered occurrences throughout California; Oregon, Washington	Coastal prairie, marshes and swamps at lake margins, valley and foothill grassland; below 2,050 feet	May–September	No suitable habitat present in study area
San Francisco Bay spineflower *Chorizanthe cuspidata var. cuspidata*	–/–/1B.2	Coastal central California, from Sonoma to San Mateo Counties	Sandy areas in coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub; below 700 feet	April–July (August)	No suitable habitat present in study area
Robust spineflower *Chorizanthe robusta var. robusta*	E/–/1B.1	Coastal central California, from Marin to Monterey Counties	Sandy or gravelly areas in coastal scrub, coastal dunes, and openings in cismontane woodland; below 1,000 feet	April–September	No suitable habitat present in study area
Point Reyes bird's-beak *Cordylanthus maritimus ssp. palustris*	–/–/1B.1	Coastal northern California, from Humboldt to Santa Clara Counties; Oregon	Coastal salt marsh; below 30 feet	June–October	No suitable habitat present in study area
Blue coast gilia *Gilia capitata ssp. chamissonis*	–/–/1B.1	Coastal California from Sonoma County to San Francisco County	Coastal dunes, coastal scrub; below 650 feet	April–July	No suitable habitat present in study area

Common and Scientific Names	Status[a] Federal/ State/CNPS	Distribution	Preferred Habitats	Blooming Period	Potential for Occurrence in the Study Area
Seaside tarplant *Hemizonia congesta ssp. congesta*	–/–/1B.2	Mendocino, Marin, San Francisco, San Mateo, Sonoma Counties	Valley and foothill grassland, sometimes roadsides; 65–1850 feet	April–November	No suitable habitat present in study area
Santa Cruz tarplant *Holocarpha macradenia*	T/E/1B.1	Coastal slope of the Santa Cruz Mountains, Monterey and Santa Cruz Counties	Coastal terrace grasslands, coastal scrub, often on light sandy to sandy clay soils; 30–720 feet	June–October	No suitable habitat present in study area
Kellogg's horkelia *Horkelia cuneata ssp. sericea*	–/–/1B.1	Coastal California from San Mateo to Santa Barbara Counties, formerly farther north	Openings in closed-cone coniferous forest, coastal scrub, maritime chaparral, on sandy or gravelly soils; 30–650 feet	April–September	No suitable habitat present in study area
Beach layia *Layia carnosa*	E/E/1B.1	Scattered occurrences along coastal California from Humboldt to Monterey Counties, formerly to Santa Barbara County	Coastal dunes, coastal scrub on sandy soil; below 200 feet	March–July	No suitable habitat present in study area
Rose leptosiphon *Leptosiphon rosaceus*	–/–/1B.1	Coastal California from Marin to San Mateo Counties; known now from one occurrence near Pacifica	Coastal bluff scrub; below 330 feet	April–July	No suitable habitat present in study area
Choris' popcorn-flower *Plagiobothrys chorisianus var. chorisianus*	–/–/1B.2	Southwest San Francisco Bay Area, northern Central Coast: Santa Cruz, San Francisco and San Mateo Counties	Mesic sites in chaparral, coastal prairie, coastal scrub; 50–525 feet	March–June	No suitable habitat present in study area
Adobe sanicle *Sanicula maritima*	–/R/1B.1	Coastal Monterey and San Luis Obispo Counties; historically known from the San Francisco Bay area in Alameda* and San Francisco* Counties	Moist clay, serpentinite or ultramafic soils, in meadows and seeps, chaparral, coastal prairie, Valley and foothill grassland; 100-800 feet	February–May	No suitable habitat present in study area
Saline clover *Trifolium depauperatum var. hydrophilum*	–/–/1B.2	Sacramento Valley, central western California	Salt marsh, mesic alkaline areas in Valley and foothill grasslands, vernal pools, marshes and swamps; below 1000 feet	April–June	No suitable habitat present in study area

Notes:

* = Extirpated from this county.

This table does not include any special-status plant species that occur in habitats not present in the study area (e.g., dunes, vernal pool, marsh).

[a] Status explanations:

Federal

E	=	listed as endangered under the federal Endangered Species Act.
T	=	listed as threatened under the federal Endangered Species Act.
–	=	No status definition.

State

E	=	listed as endangered under the California Endangered Species Act.
R	-	listed as rare under the California Native Plant Protection Act.
–	=	No status definition.

California Native Plant Society

1A	=	List 1A species: presumed extinct in California.
1B	=	List 1B species: rare, threatened, or endangered in California and elsewhere.
2	=	List 2 species: rare, threatened, or endangered in California but more common elsewhere.

CNPS Code Extensions:

.1	=	seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2	=	fairly endangered in California (20- 80% of occurrences threatened)

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Study Area
Birds				
California brown pelican *Pelecanus occidentalis californicus*	D/E	Present along the entire coastline, but does not breed north of Monterey County; extremely rare inland	Typically in littoral ocean zones, just outside the surf line; nests on offshore islands	**High.** Species forages within the open bay portion of the study area and could use the pier and other structures for resting areas. Species uses Breakwater Island.
Northern harrier *Circus cyaneus*	--/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	**Moderate- High.** Species may forage in ruderal grasslands in the study area; no nesting habitat in study area but utilizes land portion of proposed refuge area
Golden eagle *Aquila chrysaetos*	PR/SSC, FP	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals	**No-Low Potential.** Species unlikely to forage in ruderal grasslands in the study area; no nesting habitat exists in study area.
Bald eagle *Haliaeetus leucocephalus*	D/E	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean	**Low Potential.** Species may forage within the open bay portion of the study area but this is unlikely.

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Study Area
Swainson's hawk *Buteo swainsoni*	--/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields	**No Potential.** Ranges in Central Valley and highly unlikely to utilize study area foraging or nesting.
White-tailed kite *Elanus leucurus*	--/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	**Moderate**. Species may forage in ruderal grasslands in the study area; no nesting habitat in study area.
California clapper rail Rallus longirostris obsoletus	E/E, FP	Marshes around the San Francisco Bay and east through the Delta to Suisun Marsh	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickle-weed; feeds on mollusks removed from the mud in sloughs	**No Potential**. Small patches of pickleweed in the study area would not support this species.
California black rail *Laterallus jamaicensis coturniculus*	--/T, FP	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations	**No Potential**. Small patches of pickleweed in the study area would not support this species.
Western snowy plover (coastal populations) *Charadrius alexandrinus nivosus* (nesting)	T/SSC	Population defined as those birds that nest adjacent to or near tidal waters, including all nests along the mainland coast, peninsulas, offshore islands, and adjacent bays and estuaries. Twenty breeding sites are known in California from Del Norte to Diego County	Coastal beaches above the normal high tide limit in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent	**Medium - High Potential**. Study area near proposed facility locations lacks foraging or nesting habitat but species is known from land portion of the proposed refuge.
Black skimmer *Rynchops niger* (nesting colony)	--/SSC	Common summer resident at the Salton Sea; colony of permanent residents on the south end of San Diego Bay	Nests on gravel bars and sandy beaches; forages in shallow, calm waters	**No-Low Potential**. Study area lacks foraging or nesting habitat.
California least tern *Sterna antillarum* (nesting colony)	E/E	Nests on beaches along the San Francisco Bay and along the southern California coast from southern San Luis Obispo County south to San Diego County	Nests on sandy, upper ocean beaches, and occasionally uses mudflats; forages on adjacent surf line, estuaries, or the open ocean	**High**. Species known to nest 1 miles from proposed facility location at the proposed refuge location; may forage in open bay portion of study area.
Western burrowing owl	--/SSC	Lowlands throughout California, including the	Level, open, dry, heavily	**No-Low Potential**. Ruderal areas at the proposed

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Study Area
Athene cunicularia hypugea		Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	grazed or low stature grassland or desert vegetation with available burrows	facility location do not contain available burrows or other nesting substrates; species unlikely to forage in study area because area consists mostly of concrete.
Short-eared owl *Asio flammeus*	--/SSC	Permanent resident along the coast from Del Norte County to Monterey County although very rare in summer north of San Francisco Bay, in the Sierra Nevada north of Nevada County, in the plains east of the Cascades, and in Mono County; small, isolated populations	Freshwater and salt marshes, lowland meadows, and irrigated alfalfa fields; needs dense tules or tall grass for nesting and daytime roosts	**No-Low Potential**. Species unlikely to forage in study area; non-nesting habitat in study area.
Mammals				
Suisun ornate shrew *Sorex ornatus sinuosus*	--/SSC	Restricted to San Pablo Bay and Suisun Bay, both in Solano County	Tidal, salt, and brackish marshes containing pickleweed, grindelia, bulrushes, or cattails; requires driftwood or other objects for nesting cover	**No Potential**. Small patches of pickleweed in the study area would not support this species.
Salt marsh vagrant (wandering) shrew *Sorex vagrans halicoetes*	--/SSC	Restricted to southern and northwestern San Francisco Bay	Mid-elevation salt marsh habitats with dense growths of pickleweed; requires driftwood and other objects for nesting cover	**No Potential**. Small patches of pickleweed in the study area would not support this species.
Western red bat *Lasiurus blossevillii*	--/SSC	Scattered throughout much of California at lower elevations	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the Central Valley	**No-Low Potential**. Unlikely to utilize study area for foraging or roosting.
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	--/SSC	Coastal regions from Del Norte County south to Santa Barbara County	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings. Very sensitive to disturbances and may abandon a roost after one onsite visit	**No-Low Potential**. Unlikely to utilize study area for foraging or roosting.
Pallid bat	--/SSC	Occurs throughout California except the high	Occurs in a variety of	**No-Low Potential**. Unlikely to utilize study area for

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Study Area
Antrozous pallidus		Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	habitats from desert to coniferous forest. Most closely associated with oak, mixed conifer, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts but also uses caves, mines, bridges, and buildings.	foraging or roosting.
Big free-tailed bat *Nyctinomops macrotis*	--/SSC	Distribution in California is uncertain because occurrences are very rare; most likely to be found in southern California, but has been recorded in Berkeley, Alameda County	Inhabits arid, rocky areas; roosts in crevices in cliffs	**No-Low Potential**. Unlikely to utilize study area for foraging or roosting.
Western mastiff bat *Eumops perotis californicus*	--/SSC	Occurs along the western Sierra primarily at low to mid elevations and widely distributed throughout the southern coast ranges. Recent surveys have detected the species north to the Oregon border	Found in a wide variety of habitats from desert scrub to montane conifer. Roosts and breeds in deep, narrow rock crevices, but may also use crevices in trees, buildings, and tunnels	**No-Low Potential**. Unlikely to utilize study area for foraging or roosting.
Salt marsh harvest mouse Reithrodontomys raviventris	E/E, FP	San Francisco, San Pablo, and Suisun Bays; the Delta	Salt marshes with a dense plant cover of pickle-weed and fat hen; adjacent to an upland site	**No Potential**. Small patches of pickleweed in the study area would not support this species.
Southern sea otter *Enhydra lutris nereis*	T/ FP	Occurs approximately from the vicinity of Half Moon Bay south to Gaviota, California. Approximately 20 otters, including pups, are at San Nicolas Island as a result of translocation efforts to establish an experimental population	Coastal waters, typically within 1 kilometer of shoreline. Often associated with kelp beds	**Low**. Species may occasionally forage in the study area but unlikely to frequent the study area due to the lack of kelp beds.
Fish				
Green sturgeon (southern DPS) *Acipenser medirostris*	T/SSC	Sacramento, Klamath and Trinity Rivers (Moyle 2002)	Spawn in large river systems with well-oxygenated water, with temperatures from 8.0 to 14° C	**Moderate.** Species may forage in the study area.

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Study Area
Tidewater goby *Eucyclogobius newberryi*	E/SSC	Occur in lagoons of coastal streams from the Smith River (Del Norte County), to the south in Agua Hedionda Lagoon (San Diego County). Extirpated from San Francisco Bay (Moyle 2002).	Coastal lagoons along California. Prefer water with high dissolved oxygen levels and salinities less than 10 parts per thousand (Moyle 2002).	**No Potential**. No habitat in study area.
Delta smelt *Hypomesus transpacificus*	T/T	Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand. (Moyle 2002.)	**No Potential**. No habitat in study area.
Longfin smelt *Spirinchus thaleichthys*	T/SSC	Within California, mostly in the Sacramento River–San Joaquin River Delta, but also in Humboldt Bay, Eel River estuary, and Klamath River estuary.	Salt or brackish estuary waters with freshwater inputs for spawning.	**Moderate.** Species may forage in the study area.
Central California coast coho salmon *Oncorhynchus kisutch*	E/E	Includes naturally spawned populations from Punta Gorda in northern California south to and including the San Lorenzo River in central California, as well as populations in tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River system	Occur in coastal streams with water temperatures < 15° C. Need cool, clear water with instream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean (Moyle 2002).	**No Potential**. No habitat in study area.
Central California coast steelhead *Oncorhynchus mykiss*	T/--	Russian River to Soquel Creek, Santa Cruz Co.	Cold, clear water with clean gravel of appropriate size for spawning. Most spawning occurs in headwater streams.	**Moderate.** Species may migrate through the study area.
Central Valley steelhead *Oncorhynchus mykiss*	T/--	Sacramento River and tributary Central Valley rivers	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18° C (Moyle 2002). Habitat types are riffles, runs, and pools.	**No-Low Potential.** Unlikely to utilize project area for migration.
Sacramento River winter-run Chinook salmon	E/E	Mainstem Sacramento River below Keswick Dam (Moyle 2002)	Occurs in well-oxygenated, cool, riverine habitat with	**No-Low Potential.** Unlikely to utilize project area for migration.

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Study Area
Oncorhynchus tshawytscha			water temperatures from 8.0 to 12.5° C. Habitat types are riffles, runs, and pools. (Moyle 2002.)	
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	T/T	Upper Sacramento River and Feather River	Has the same general habitat requirements as winter-run Chinook salmon. Coldwater pools are needed for holding adults (Moyle 2002).	**No-Low Potential.** Unlikely to utilize project area for migration.
Pacific herring *Clupea pallasi*	--/SSC	Along California coast to northern Baja California (Love 1996)	Spawning occurs from San Francisco Bay to San Diego Bay. January and February are peak spawning months but can start early October and continue to April. Adults move into quiet bays and estuarties and spawning occurs in shallow, intertidal waters down to 36 feet (Love 1996).	**Moderate.** Species could spawn and rear in the project area.

Status explanations:

Federal

E	=	Listed as endangered under the federal Endangered Species Act.
T	=	Listed as threatened under the federal Endangered Species Act.
D	=	Delisted.
PE	=	Proposed for federal listing as endangered under the federal Endangered Species Act.
PT	=	Proposed for federal listing as threatened under the federal Endangered Species Act.
C	=	Species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
--	=	No listing.

State

E	=	Listed as endangered under the California Endangered Species Act.
T	=	Listed as threatened under the California Endangered Species Act.
FP	=	Fully protected under the California Fish and Game Code.
SSC	=	Species of special concern in California.
--	=	No listing.

Appendix C

Phase I Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

JANUARY 2010

The Southeast Corner
of W. Hornet Avenue
and Ferry Point Road
Alameda, California

For:

San Francisco Bay Area
Water Emergency Transportation Authority
Planning and Development
San Francisco, California

Y9374-00.01405

5900 Hollis Street, Suite D • Emeryville, California 94608 • (510) 420-8686

BASELINE
ENVIRONMENTAL CONSULTING

22 January 2009
Y9374-00.01405v.1

Ms. Laurie Karlinsky
ICF Jones & Stokes
620 Folsom Street, 2nd Floor
San Francisco, CA 94107

Subject: Phase I Environmental Site Assessment: the Southeast Corner of W. Hornet Avenue and Ferry Point Road, Alameda, California

Dear Ms. Karlinsky:

Please find enclosed our report documenting the activities and findings of a Phase I Environmental Site Assessment performed at the southeast corner of W. Hornet Avenue and Ferry Point Road, Alameda, California. If you have any questions or comments, please contact us at your convenience.

Sincerely,

Yane Nordhav
Principal
Professional Geologist No. 4009

Ralph Russell
Environmental Analyst

YN:RER:km

Enclosure

Y9374-00 01415 WETA Phase_I_ESA_012110.doc-1/22/10

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Emeryville Petaluma San Francisco

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

JANUARY 2010

The Southeast Corner of W. Hornet Avenue and Ferry Point Road
Alameda, California

For:

San Francisco Bay Area Water Emergency Transportation Authority
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Y9374-00.01405

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TABLE OF CONTENTS

page

EXECUTIVE SUMMARY iv
1. INTRODUCTION 1
2. SITE DESCRIPTION 2
3. HISTORICAL LAND USES 3
4. ENVIRONMENTAL DATABASE REVIEW 8
5. CURRENT LAND USES AND SITE RECONNAISSANCE 9
6. INTERVIEW WITH FUTURE USER OF THE PROJECT SITE 10
7. DATA GAPS 11
8. ASTM E1527-05 DEVIATIONS 11
9. CONCLUSIONS AND RECOMMENDATIONS 12
10. ENVIRONMENTAL PROFESSIONAL STATEMENT 13
11. LIMITATIONS 13
12. REFERENCES 14

APPENDICES

A: Historical Land Use Resources (Portable Document Format on CD ROM)
B: Environmental Database Report (Portable Document Format on CD ROM)
C: Phase I User Questionnaire
D: Qualifications of Preparers

FIGURES

1: Regional Location
2: Project Site and Adjacent Lands
3: Sites with Known Hazardous Materials Use and/or Release within One-Quarter Mile of the Project Site
4: Photographs from Site Reconnaissance, 10 November 2009
5: Photographs from Site Reconnaissance, 10 November 2009

EXECUTIVE SUMMARY
PHASE I ENVIRONMENTAL SITE ASSESSMENT

The Southeast Corner of W. Hornet Avenue and Ferry Point Road
Alameda, California

BASELINE Environmental Consulting performed a Phase I Environmental Site Assessment (ESA) near the southeast corner of W. Hornet Avenue and Ferry Point Road in Alameda, California (project site). The San Francisco Bay Area Emergency Water Transportation Agency (WETA) is considering a long-term lease of the project site for a proposed maintenance and operations facility in support of ferry operations. The purpose of this investigation was to determine whether recognized environmental conditions (RECs) are present at the project site or adjoining properties as defined in the American Society of Testing and Materials (ASTM) Method E1527-05, "Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process."

The scope of work for the Phase I ESA included: a review of historical land use information, including historical topographic maps and aerial photographs; a reconnaissance of the project site; and a review of environmental records from federal, state, and local sources. All work was conducted in accordance with ASTM Method E1527-05.

CONCLUSIONS AND RECOMMENDATIONS

- Prior to filling of San Francisco Bay, the project site was open water approximately 2,400 feet offshore from Alameda Island. The landside portion of the project site was created between 1942 and 1946 by filling (reportedly with mostly dredge spoils), and by 1946, the rail line crossing the site and W. Hornet Avenue had been constructed. By 1959, a building housing a snack-shop and a boat house had been constructed. In 1966 a replacement structure, Navy Building No. 385, was constructed and served as a restaurant and maintenance building for the recreational marina located on the adjacent parcel to the east. Reportedly, a hazardous materials storage locker was located in the eastern portion of the landside portion of the project site. The project site was cleared of aboveground structures, and subsurface utilities, such as sanitary sewer connections, were sealed, sometime during 2006 and/or early 2007. Fuel lines associated with the basewide fuel distribution systems have been removed from the project site by the Navy.

- The project site is entirely within a larger area variously designated Terminal 1, or Term-1. This irregularly shaped area is mapped as Salt March & Tide Lands (submerged lands) in the County of Alameda's Assessors/County Clerks maps, and as property of the City of Alameda. The City of Alameda leased these submerged lands to the Navy prior to their development as part of NAS. The NAS was closed in 1997, and the Navy's lease of the property expired, returning control of the property to the City of Alameda.

- The adjoining land uses to the north and east of the project site were identified as primarily paved open space uses, consisting of parking areas for aircraft during the 1940s to the

1960s, and for vehicle parking from the 1960s until Navy base closure proceedings in the 1990s. Since the Navy base closure, the adjacent areas have been primarily vacant except for vehicle parking. Pier 3, northwest of the site, has been converted to a permanent base for the USS Hornet, which now serves as a museum. To the east, the land adjoining Breakwater Beach has been become a park, and is managed by the East Bay Regional Parks system.

- Land uses associated with hazardous materials use were identified by the Navy as part of the base closure activities. These included railroad tracks, a former hazardous materials storage locker, and a building housing marina maintenance activities (including storage of pesticides). The project site was determined by the Navy to not warrant remedial actions to protect human health or the environment.

- Observations made during reconnaissance of the project site identified no current use of the project site, or land uses on adjoining properties that indicated current use of hazardous materials. No evidence of hazardous materials release was observed at the project site and adjoining properties.

- Historical use of the landside portion project site as a rail corridor and landscaped area are considered RECs due to the potential for releases of pesticides, herbicides, metals, and fuels. It is recommended that the rail corridor and landscaped areas be investigated to determine possible presence of organic (including total petroleum hydrocarbons [TPH], semivolatile organic compounds [SVOCs], polychlorinated biphenyls [PCBs], pesticides, and herbicides) and inorganic compounds in the subsurface. It is recommended that a licensed professional develop a soil sampling program to assess potential effects to human health (including future users and construction workers) and the environment; in addition, the sampling approach should consider analytical requirements for soil management/disposal purposes, should the area be excavated as part of future development. Depending on the results of the investigation, additional sampling may be necessary to determine potential effects to underlying groundwater.

- The past on-site operation of a restaurant and marina maintenance facility, and the former presence of a locker for storage of hazardous materials, could have resulted in releases to the subsurface of organic (TPH, pesticides, PCBs, SVOCs, and volatile organic compounds [VOCs]) and inorganic compounds, (including locations of drains or along utility lines); this is considered an REC. It is recommended that either during demolition of the existing foundation slab and other paved areas of the project site, or prior to removal, a licensed professional develop and implement a soil sampling program to determine potential effects to human health (including future users and construction workers) and the environment; in addition, the sampling should consider analytical requirements for soil management/disposal purposes, should the area be excavated as part of future development. Depending on the results of the investigation, additional sampling may be necessary to determine potential effects to underlying groundwater.

- Any dredging or removal of piers required for the waterside development could result in requirements for special handling of generated wastes. Sediment sampling was performed by the Navy within the waterside portion of the project site near Outfall N as part of the

Breakwater Beach evaluation; this area could have been affected by historic stormwater discharges; this is considered an REC. It is recommended that sediment sample(s) be collected in accordance with the requirements of the Dredged Materials Management Office prior to future dredging. In addition, prior to removal of any piers, a management plan should be prepared to ensure management of treated wood in accordance with DTSC Treated Wood Waste guidance.

- The future user is not aware of any environmental clean-up liens or land use limitations associated with the site.

PHASE I ENVIRONMENTAL SITE ASSESSMENT

The Southeast Corner of W. Hornet Avenue and Ferry Point Road Alameda, California

1. INTRODUCTION

This report presents the activities and findings of a Phase I Environmental Site Assessment (ESA) performed by BASELINE Environmental Consulting (BASELINE). The project site is approximately one-half acre of land (landside) and three acres of San Francisco Bay (waterside) located near the western end of W. Hornet Avenue at Alameda Point in the City of Alameda, California (Figure 1).

The San Francisco Bay Area Emergency Water Transportation Agency (WETA) is considering a long-term lease of the project site for a proposed maintenance and operations facility in support of ferry operations. The proposed landside facility would include a three-story building with an approximately 5,600 square feet footprint with drilled or driven pier foundation supports, and four 10,000-gallon below-grade fuel/urea[1] storage tanks. Waterside improvements would include dredging to a depth of ten feet below mean lower low water (MLLW), and installation of piers and a floating dock structure with berthing space for a maximum of ten ferries. Up to ten berths would be equipped for fueling, maintaining, and resupplying the ferries.

This Phase I ESA was performed for WETA in accordance with *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* adopted by ASTM International in Method E1527-05. ASTM Method E1527-05 includes provisions designed to meet the requirements of U.S. Environmental Protection Agency's All Appropriate Inquiry contained in Title 40 of the Code of Federal Regulations Part 312 (40 CFR). The purpose of this assessment was to determine whether recognized environmental conditions (RECs)[2] were present at the project site, including the waterside area of proposed dock facilities, and/or adjoining properties[3] based on current and/or previous land uses. The scope of work for the Phase I ESA included: a review of historical land use information, including historical

[1] A mix of urea (chemical formula (NH2)2CO) and water is used as the catalytic reduction agent for reducing the oxides of nitrogen (NOx) and other emissions from diesel engines.

[2] RECs are defined in ASTM E1527-05 as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property." According to ASTM E1527-05, the term "REC" is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental authorities.

[3] Adjoining properties are defined in ASTM E1527-05 as "any real property or properties the border of which is contiguous or partially contiguous with that of the [subject] *property*, or that would be contiguous or partially contiguous with that of the [subject] *property* but for a street, road, or other public thoroughfare separating them." This report uses this definition of adjoining property throughout this document.

topographic maps and aerial photographs; a reconnaissance of the project site; and a review of environmental records from federal, state, and local sources.

2. SITE DESCRIPTION

2.1. Physical Description

The landside of the project site is a roughly rectangular area starting approximately 130 feet east of the current intersection of W. Hornet Avenue and Ferry Point Road (also mapped as 5th Street or Wharf Road) and continuing eastward to approximately the historic Marina entrance. The landside includes the roadbed of W. Hornet Avenue, and the area south to the shore of San Francisco Bay. (Figure 2). The waterside area is an irregularly shaped approximately three-acre portion of San Francisco Bay fronting the landside area and continuing offshore approximately 200 to 400 feet south. The landside portion of the project site is nearly flat and has an elevation of approximately six to eight feet above mean sea level (EDR, 2009a).

The landside portion of the site is bordered to the north by paved open area with a small utility building and fenced storage yard, a park to the east, Pier 3 and the USS Hornet to the west, and San Francisco Bay (partially fronted with a rip-rap breakwater, and partially with beach) to the south.

2.2. Geology and Hydrology

The landside portion of the project and vicinity is underlain by five units of Quaternary sediments overlying Franciscan bedrock. The five units are, from top to bottom: artificial fill, Bay Mud, Posey/Merritt Sand Formation, upper San Antonio Formation, and lower San Antonio Formation.

The artificial fill at the project site was placed between 1942 and 1946[4]. A generalized geologic cross section was prepared for an area about 1,000 feet northeast of the landside portion of the project site. The materials underlying that area include artificial fill, estimated to be approximately 10 to 12 feet thick, overlying Bay Mud, which is approximately 8 feet thick. The Bay Mud is underlain by Posey/Merritt/San Antonio Formation in excess of 20 feet thick. The materials underlying the landside portion of the project site may be similar. Groundwater was generally about 6 feet below ground surface (bgs) (Tetra Tech, 2009).

No surface water traverses the landside portion of the project site. Most surface runoff is captured by drop inlets set in the pavement leading to a storm drain culvert under the site. The storm drain discharges directly into the Bay (Figure 2). In the eastern portion of the project site, runoff, as sheet flow, moves to a landscaped area at the adjacent park or to the Bay. Based on the topography and proximity to the Bay, groundwater would be expected to flow to the south-southwest toward the Bay.

[4] The project site is not mapped as underlain by Marsh Crust, a term referring to a relatively thin layer of deposits that would have formed during the early part of the 20th century consisting of sludge and hydrocarbon by-products released by early industries along the Oakland Inner Harbor and Alameda Island (Tetra Tech, 2003a).

3. HISTORICAL LAND USES

Historical land uses at the project site and adjoining properties were identified to assess potential sources of hazardous materials that could have affected soil and groundwater quality at the project site. Portions of an Environmental Baseline Survey (EBS), prepared as part of the closure proceedings for the Alameda Naval Air Station (NAS) by the Navy, were reviewed (IT, 2001a). In addition, historical land uses in the vicinity of the project site were determined through review of topographic maps from 1915 through 1980, and aerial photographs from 1939 through 2005 (EDR, 2009d). Historical Sanborn Maps or Tax Map files were not available for the area (EDR, 2009c, 2009f). The EDR historical land use resources reviewed for this Phase I ESA are included in Appendix A.

3.1. Project Vicinity History

The project site is within the NAS Base Realignment and Closure (BRAC) area, now known as Alameda Point. The former NAS occupied approximately 1,700 acres of land and about 1,000 acres of water. A BRAC Cleanup Plan (Cleanup Plan) was prepared by Tetra Tech EM Inc. (Tetra Tech) for the Navy (Tetra Tech, 2003).

The 2001 EBS divided the NAS into smaller parcels; these parcels are referred to as "EBS Parcels." Based on the EBS parcelization, NAS was subsequently divided into 38 Installation Restoration (IR) sites within the Alameda Point project area. These 38 IR sites were organized into a total of 10 Operable Units (OU) based on geographic proximity and environmental characterization. The landside portion of the project site includes small portions of EBS Parcels 160A, 162, and the majority of 198. The waterside area was not included within an EBS parcel (Figure 2). The project site is partly within IR Site 24 (Figure 2), which includes portions of landside and waterside project site.

The entire project site is also located within the larger Terminal 1 (Term-1) area, which was historically salt marsh and tide lands. Unlike the majority of the former NAS, the Term-1 property is owned by the City of Alameda, and was leased by the Navy until the base closure in 1997, when control of the property reverted to the City of Alameda (Thomas, 2009).

3.2. Project Site

The project site is located near the west end of W. Hornet Avenue (Figure 2). Aerial photographs show the area was open Bay in 1939. By 1946 the area had been filled to its present extent and W. Hornet Avenue, and rail tracks (traversing the landside portion of the project site) had been constructed (EDR, 2009d).

In 1953 a dock was constructed for a small craft marina on the waterside portion of the project site. By 1958 a boathouse and snack shop had been constructed on the landside portion of the project site (IT, 2001a).

Between 1965 and 1998, the docks were reconfigured several times. Portions of abandoned docks are still present within a portion of the waterside of the project site (Figure 5B) (EDR, 2009d). In 1966 Navy building No. 385 was constructed on the landside of the project site where the snack shop and boathouse had been located previously. Building No 385 was used as a

restaurant and maintenance area for the marina (Tetra Tech, 2003a). Building 385 is still shown in the 2005 aerial photograph for the site (EDR, 2009d). The building has subsequently been removed, but the foundations are still present on the landside of the project site. Navy documents (IT, 2001a) also report the past presence of a hazardous materials locker in the eastern portion of the project site.

3.2.1 Past Environmental Investigations and Observations

Environmental investigations have been conducted at the project site as part of Navy assessments of the environmental conditions of the NAS. The investigations by the Navy have been both parcel-specific and also part of basewide investigations, as described below.

Fuel Pipelines – Basewide. Starting in approximately 1997 and currently in the final implementation stages, there was as basewide removal of pipelines and tanks used for transporting and storing fuels as part of the Basewide Petroleum Cleanup Project (Battelle, 2009). The basewide removal action included the removal of fuel pipelines that traversed the project site (Tetra Tech, 2003b). Based on site plans, the pipelines were located just above the riprap on the outboard side of the retaining wall facing the Bay (Battelle, 2009). In addition, a basewide sewer investigation, addressing the industrial, storm, and sanitary sewers, was conducted by the Navy. Sewer corridor samples were not collected from the project site (IT, 1997, 2001a).

Radiological Issues – Basewide. A basewide Historical Radiological Assessment (HRA) was prepared by the Navy in 2000; the HRA concludes that, based on the environmental radioactivity data collected by the Navy since 1966, no cobalt-60 or other radioactivity attributable to the Naval Nuclear Propulsion Program (NNPP) at the NAS has ever been detected, and that no significant radioactivity has accumulated in the marine environment based on water, sediment, and biota sampling (HRA, 2000).

EBS Parcel 198. As part of the EBS, Parcel 198 was subject to a Parcel Evaluation Plan (PEP). The landside portion of the project site is partially within parcel 198 (Figure 2). The objective of the PEP parcel-specific sampling effort was to investigate and document the existing environmental conditions at EBS Parcel 198. The PEP noted that pesticides had been used inside Building 385 during 1992 and 1993, and that petroleum products had been stored in the boat maintenance portion of the building continuously since its construction; however, there were no documented spills. No lead-based paint issues were identified for Building 385. No polychlorinated biphenyls (PCBs) issues were identified for Parcel 198. Asbestos containing-materials were identified as insulation on pipes and fitting in Building 385 (IT, 2001b).

One soil sample (198-0003M on Figure 2) was collected by IT Corporation for the Navy on EBS Parcel 198 in 1995. The sample was collected adjacent to the rail junction at 2.5 bgs. This sampling was part of a larger sampling effort related to railroad tracks at NAS. The sample was analyzed for lead, total petroleum hydrocarbons (TPH) as gasoline, diesel, and motor oil, semivolatile organic compounds (SVOCs), and PCBs.

- Lead was detected at 2.2 milligrams per kilogram (mg/kg).
- TPH as diesel (2.4 mg/kg) and TPH as motor oil (150 mg/kg) were detected.

- SVOCs and PCBs were not detected above laboratory reporting limits.

Five additional soil samples were also collected in 1995 on the landside portion of the project site in the eastern portion of EBS Parcel 198 as part of a NAS parcel-specific investigation. The samples consisted of two surface samples (198-0001M, 198-0002M on Figure 2) collected at 0.5 to 1.0 feet bgs, and three subsurface samples (198-0004M, 198-0004, 198-0005M) collected at 4.0 to 4.5 feet bgs. Surface soil samples were analyzed for TPH as diesel and motor oil. The subsurface soil samples were analyzed for TPH as diesel, and motor oil, and VOCs.

- TPH as motor oil was detected in surface sample 198-0001M at 1,100 mg/kg.
- TPH as motor oil was detected in subsurface samples 198-0004M (1,000 mg/kg), and 198-0004 (30 mg/kg).
- TPH as diesel was detected in subsurface sample 198-0005M (2.2 mg/kg).
- VOCs were not detected in the samples above laboratory reporting limits.

EBS Parcel 162. The eastern portion of the landside portion of the project site was part of EBS Parcel 162 (Figure 2). The PEP for EBS Parcel 162 noted that chemicals were reportedly stored in a hazardous materials locker located on asphalt near the western border of EBS Parcel 162 (within the eastern portion of the project site).

The stored chemicals in the hazardous materials locker were reported to be marina supplies including non-halogenated solvents, paints, and petroleum products. The total volume of materials stored was estimated to be less than 75 gallons. The PEP noted a stained area in front of the locker that covered approximately 25 square feet. Based on the visual evidence of ground staining, two soil samples were collected in 1995 by IT Corporation from that portion of EBS Parcel 162 that is located within the landside portion of the project site (Figure 2). One soil sample (162-0001) was collected at 1.0 to 1.5 feet bgs, and one subsurface soil sample (162-0002) was collected at 4.0 to 4.5 feet bgs, and analyzed for TPH as diesel and motor oil. In addition, the subsurface sample was analyzed for volatile organic compounds (VOCs) and TPH as gasoline.

- Analytical results of soil samples for 162-0001 and 162-0002 indicated 38 mg/kg and 900 mg/kg TPH as motor oil, respectively.
- TPH as diesel was not detected above laboratory reporting limits.
- VOCs were not detected above laboratory reporting limits.
- TPH as gasoline was not detected above laboratory reporting limits.

No conclusions or recommendations regarding remediation were made; however, the report concluded that no additional sampling was recommended for EBS Parcel 162 (IT, 1997).

EBS Parcel 160A. The northern edge of the landside of the project site falls within EBS Parcel 160A. EBS Parcel 160A was originally a portion of EBS Parcel 160; however, the border of EBS

160 intersected land in the Term-1 area, and 160A was set aside to facilitate transfer to the Alameda Reuse and Redevelopment Authority. Historical use of EBS 160 was characterized as aircraft parking and no chemical storage, spills, or staining were noted at EBS 160 during preparation of the original 1994 EBS; potential impact to soil or groundwater was characterized as 'unlikely,' and the Navy recommended that no further evaluation was warranted for EBS Parcel 160 (Bechtel, 2007).

IR Site 24. The Navy has conducted investigations to develop and implement remediation strategies for all the IR sites. Originally, the landside portion of the project site was determined to not be within any IR site, and as a result the landside portion of the project site was not included within an OU (IT, 2001a). The area defined as IR Site 24 was subsequently expanded to include part of EBS Parcel 198 (the landside portion of the project site), and a portion of the waterside of the project site in a Final Feasibility Study Report (FFSR) (Bechtel, 2008).

Results of investigations of IR Site 24 by the Navy indicated that the highest concentrations of contaminants were in the northeastern corner of IR Site 24 (approximately 1,000 feet north of the project site) (DTSC, 2009). The Navy prepared a Proposed Plan for implementation of a remedial action for IR Site 24. This Proposed Plan evaluated remedial alternatives for the contaminated sediment portion of IR Site 24. For the remainder of IR Site 24 (including the landside and waterside portions of the project site), no further action was recommended, and no land-use restrictions, environmental monitoring, or other cleanup actions were recommended (Navy, 2009).

Storm drain Outfall M, underlying the site, discharges stormwater directly into the Bay on the waterside portion of the project site. As part of the preparation of the FFSR for IR Site 24, discussed above, sediment cores were collected during 2005 or 2006 from the waterside potion of IR Site 24 to characterize potential sediment contaminants from storm drain outfalls. One of these samples was collected at the project site. In 2005, sample PAC-19 (Figure 2) was collected approximately 50 feet offshore in the waterside portion of the project site about 100 feet west of storm drain Outfall M. Sample PAC-19 was analyzed for polycyclic aromatic hydrocarbons (PAH), PCBs, pesticides, and metals.

- Total PAH, pesticides, total PCB, and metal concentrations at PAC-19 did not exceed the effects range-median[5] (ER-M) values established as threshold for ecological impact for the former base (Bechtel, 2008).

Risk Evaluation – Breakwater Beach Area. An ecological and human health risk evaluation was conducted by Battelle for the Breakwater Beach area, which includes the waterside portion of the project site in the vicinity of storm drain Outfall N. Storm drain Outfall N, underlying the site, discharges stormwater directly into the Bay on the waterside portion of the project site. This areas could have been affected by historic stormwater discharges. A total of six samples were collected from four sampling locations (BB001, BB004, BW01, and BW02) for the Breakwater Beach evaluation within the waterside of the project site (Figure 2).

[5] EPA definition: The concentration of a contaminant above which harmful effects always or almost always occur.

- No ER-M values were exceeded in surface sediment for any inorganic constituents or organic chemicals, except for nickel, during any sampling event for Breakwater Beach. Nickel was the only analyte at Breakwater Beach that exceeded its ER-M in surface sediment, but nickel concentrations at Breakwater Beach were not different from San Francisco Bay ambient nickel concentrations (Battelle, 2007).

- In the subsurface sediment, no ER-Ms were exceeded for inorganic constituents except for nickel (which was less than ambient), and the only organic chemical that exceeded the ER-M was Total PCBs at BB004 in the 1996 sample (PCBs at a sediment depth of 75 to 180 cm were 210 µg/kg compared to an ER-M value of 180 µg/kg) (Battelle, 2007).

The study concluded that no unacceptable risks were identified for any of the ecological receptors, and human health risks were all determined to be consistent with ambient conditions. Based on this information, no remedial action was recommended by Battelle for the Breakwater Beach area (Battelle, 2007).

3.3. Adjoining Properties

Alameda Point is reported to be predominantly built on land created by placing fill (mostly dredge fill) in the Bay and over tidal areas (HRA, 2001). The Bay was filled to create the project site and surrounding land between 1942 and 1946, and the layout and structures of the adjoining properties have remained relatively stable since then.

In the 1946 aerial photograph, a small structure had been constructed about 200 feet north of the project site, and a large triangular-shaped field to the east served as parking for aircraft. By 1959 two large above-ground tanks had been constructed about 700 feet east of the project site beyond the marina (EDR, 2009d). These tanks were cleaned, demolished, and removed in 2008 by the Navy (RAB, 2008). In 1959, aircraft and vehicles were also parked in large numbers to the east and north of the project site, and an additional building had been constructed about 300 feet north of the site. In 1965, the landscaping had been reconfigured and a new dock had been installed at the marina immediately southeast of the project site. Since 1965 until present, no significant additions are apparent from the historical aerials for the adjacent area (EDR, 2009d).

3.4. Historical Land Uses Associated with Hazardous Materials

Prior to 1936, the western end of the original Alameda Island (approximately 2,400 feet northeast of the project site) was occupied by a borax processing plant, an oil refinery, and an airport for the City of Alameda. Initially the areas were acquired by the Army in 1930. Since 1936, when the Navy acquired title to the area, the air station's primary mission was to provide facilities and support for fleet aviation activities. The Navy expanded the NAS by filling the Bay in phases through 1975. Wastes generated at NAS included industrial solvents, acids, paint strippers, degreasers, caustic cleaners, pesticides, chromium and cyanide wastes, waste oils containing PCBs, radium associated with dial painting and stripping, medical debris, and inert and unexploded ordnance. Solid wastes generated at the NAS were disposed into two on-base landfills at the western end of the NAS, approximately 1.8 miles northwest of the project site. All liquid industrial wastewaters generated at the site prior to 1974 were discharged untreated into the Seaplane Lagoon located 0.5 mile to the north of the project site, and the Oakland Inner

Harbor located 1.3 miles to the north (U.S. EPA, 2009). Some of these historic off-site land uses, including aircraft parking north of the project site, could have affected stormwater quality discharging through the outfalls under the site and into the waterside portion of the project site.

At the landside portion of the project site, railroad tracks traversed the center of the site. Common contaminants associated with railroad tracks are pesticides and herbicides, metals (depending on the type of ballast used), SVOCs, and petroleum hydrocarbons. Operation of a restaurant and marina maintenance facility (Navy Building No. 385) at the site may have resulted in the discharge of various oils and greases from food preparation or discharges of fuels/solvents from maintenance activities onto the ground or into sewers or sumps; reportedly pesticides were used at this building in the 1990s. Maintenance of a landscaped area may have involved the use of fertilizers and/or pesticides. The operation of a hazardous materials locker, on the eastern portion of the project site, could also have resulted in the discharge of hazardous materials onto the ground.

At the waterside portion of the project site hazardous materials may have been contained in the stormwater discharging from the storm drain outfalls located at the project site; the discharges may have included urban/industrial-type pollutants such as organic and inorganic contaminants that may have affected the quality of sediments in the area.

4. ENVIRONMENTAL DATABASE REVIEW

BASELINE contacted Environmental Data Resources, Inc. (EDR), an environmental resource service, to conduct a search of environmental records from federal, state, and local databases pertaining to past and present hazardous materials uses and releases on properties at or near the project site (EDR, 2009a) (Appendix B). For the purposes of this report, sites with known hazardous materials use and/or release within one-quarter mile of the project site identified by EDR were evaluated to determine whether they could potentially affect conditions at the project site.

4.1. Sites Associated With Use, Storage, Generation, or Disposal of Hazardous Materials

Two sites of current facilities associated with hazardous materials use were identified within one-quarter mile of the project site (Figure 3). The first site was Delta Sandblasting Company, Inc., at 1501 Viking St, Alameda; this company is a Small Quantity Generator of Hazardous Waste (primarily uses solvents and acids) located approximately one-quarter mile northeast of the landside portion of the project site. No hazardous materials violations by this firm at this location were noted in the database (EDR, 2009a). This site is therefore unlikely to affect the project site.

The second site was for National Response Corporation Environmental Services (NRC) activities related to cleanup of NAS facilities. NRC is listed as a “handler” of hazardous waste and a conditionally exempt small quantity generator. No violations were noted related to their activities. This site is therefore unlikely to affect the project site.

A supplemental inquiry of the EDR databases indicated approximately 200 entries from various sources related to historic NAS activities (EDR, 2009b). The project site was not specifically identified in any of the databases searched by EDR as associated with the storage, generation, or disposal of hazardous materials; however, the project site is within the larger defined area for the NAS cleanup program. The environmental database report is included in Appendix B.

4.2. Sites Associated with a Hazardous Materials Release

EDR identified the NAS in the Department of Defense facilities database, noting that the NAS is to be closed (EDR, 2009a). The project site is located with the boundaries of the NAS. A supplemental inquiry of the EDR database materials indicated the National Priorities List (NPL) (Superfund) entry for the NAS, and inclusion of the NAS in the CERCLIS[6] database (EDR, 2009b). The EDR database search report indicated approximately 200 entries related to historic base activities including both use and release of hazardous materials; the project site was not specifically identified as associated with any release records.

4.3. Orphan Sites

The EDR report included an orphan summary, which contained sites with known hazardous materials use and release, but with poor or inadequate address information; these sites may be within the search distance established by the ASTM Standard Method E1527-05. The orphan sites were evaluated to determine whether they could be proximate to the project site and potentially affect conditions at the project site.

The orphan summary listed 20 sites with corresponding address and database information (Appendix B). Of the 20 sites, 13 sites were identified in federal and state databases associated with hazardous materials use, but not releases. These sites are considered unlikely to affect conditions at the project site since no releases of hazardous materials have been reported. The other seven orphan sites were identified in federal and state databases associated with hazardous materials releases. These seven sites were reviewed and were determined to be more than one-quarter of a mile from the project site. One record in particular is noted for referring to a spill at the 'Alameda Marina,' however, the location description places the spill in the Oakland Estuary, on the north edge of Alameda Island. An EDR Site Report for each of the 20 orphan sites is included in the environmental database report included in Appendix B.

5. CURRENT LAND USES AND SITE RECONNAISSANCE

A BASELINE environmental analyst conducted a visual reconnaissance of the project site on 10 November 2009. BASELINE staff was accompanied during the reconnaissance of the project site by a representative of WETA, the future project site user. The reconnaissance was conducted to document current land uses and evidence of storage, generation, release, and disposal of hazardous materials at the project site and adjoining properties. Observations on adjoining properties were made from public rights-of-way. Photographs taken during the reconnaissance of the project site are shown on Figures 4 and 5. Observations made during the site reconnaissance are included in the descriptions below.

[6] The US EPA Comprehensive Environmental Response, Compensation, and Liability Information System.

5.1. Properties Adjacent to the Project Site

The adjoining properties to the south, north and east of the project site (Figure 2), consist primarily of open areas and were observed to be vacant during the reconnaissance. No signs of distressed vegetation, stained soil, odors, or other evidence that would suggest a hazardous materials release, were observed at adjoining properties. Sumps, drums, transformers, tanks, standpipes, ponds, basins, or containment structure of hazardous materials or associated structures were not identified on properties adjoining the project site. The USS Hornet is currently berthed at Pier 3, west of the project site, and is used as a museum. Immediately west of the landside portion of the project site is an approximately 30- by 30-foot fenced enclosure around a high-voltage transformer. The enclosed transformer area is not part of the project site (Gougherty, 2009).

5.2. Project Site

Landside. The site is vacant and currently unused. No evidence of current hazardous materials use or storage was noted during the BASELINE site reconnaissance. The landside area contains the remnant foundations of an approximately 4,500 square-foot building and associated sewer pipes and drains within the building foundation; the pipes and drains were observed to be sealed with plates or grout at ground level (Figure 4A). The landside also contains a partially paved and partially vegetated 12-foot planter-strip adjacent to W. Hornet Avenue; the project site is crossed by a standard gauge railroad track with siding junction (Figure 5A). The remainder of the landside portion of the project site is paved with either concrete or asphalt. A vertical concrete wall, topped by a chain link fence, fronts the Bay with large rip-rap and broken concrete at the base on the waterside (Figure 4B).

Waterside. The waterside of the project site includes a portion of what was formerly a recreational marina dock area. A site map prepared for IR Site 24 indicates that storm drains Outfall M and N are located just offshore (Bechtel, 2008) (Figure 2); however, outfall M was not apparent during the site reconnaissance and Outfall N was not identified as the landside of the project does not extend as far east as Outfall N. Concrete pilings, docks, ramps and floating debris, consisting primarily of timbers and broken wooden pilings (possibly treated wood), occupy a portion of the waterside project site (Figure 5B).

6. INTERVIEW WITH FUTURE USER OF THE PROJECT SITE

A Phase I user questionnaire was prepared by the future user The Phase I user questionnaire, based on ASTM Standard Method E1527-05, discloses information and/or specialized knowledge of the user that may be helpful in identifying RECs in connection with the project site. A copy of the interview questionnaire is included in Appendix C.

WETA representative John Sindzinski indicated on the interview questionnaire (Appendix C) that he is not aware of any environmental liens against the property, land use limitations associated with the project site, or the presence of contamination at the project site.

7. DATA GAPS

The ASTM Standard Method E1527-05 requires the identification of data gaps, along with actions taken to address these gaps, and an opinion as to whether these gaps are significant. Information sources at intervals greater than five years between sources from the present to 1940 or the first developed land use, whichever is earlier, can be considered a data gap. In addition, a lack of or the inability to obtain information required by the ASTM Standard (i.e., site reconnaissance or interview with the owner/key site manager) may constitute a data gap.

No Sanborn Maps, Tax Maps, or City Directories were available for the project site; however, either an aerial photograph or topographic map was available for the years 1915, 1939, 1946, 1948, 1949, 1959, 1965, 1968, 1973, 1975, 1980, 1982, 1993, 1998, and 2005. Prior to about 1942 the area of the project site was open water and part of San Francisco Bay. For the 13-year period between the aerial photos of 1946 and 1959 there was no change in the shoreline or roads adjoining the property, but a building had been constructed on the project site. This is consistent with the site history provided in the EBS for the NAS indicating that in 1958 a boathouse and 'snack-shop' were constructed. The topographic map of 1948 appears to be in error, at it does not show the changed shoreline evident in the 1946 aerial photograph. Based on the 1982 and 1993 aerial photographs, there appear to be no changes on the landside of the project site; however, the Marina docks had been reconfigured. Neither of these gaps in the historical record would be expected to indicate a significant limitation in our understanding of the project site and activities. Continuous land control by the Navy, consistent use purposes, and minimal structural changes to the site indicate consistent use. In addition, the existing conditions of the project site, as determined during reconnaissance of the project site, match the anticipated conditions from the aerial photographs.

A good faith effort was made to discover any and all Environmental Cleanup Liens (Liens), and Activity and Land Use Limitations (AULs) that may affect the project site. The project site does not have an address and has not been platted by the County. The good faith effort was based both on online research with the Alameda County Clerk's office, DTSC, Region 9 U.S. EPA, and the EDR database service, as well as phone and email inquiries made to the Dot Lofstrom, DTSC Project Manager for the NAS closure, and to Andrew Thomas, Supervising Planner for the City of Alameda. Liens and AULs affecting the project site were not discovered.

The project site and surrounding area were leased from City of Alameda by the Navy starting in approximately 1942. Prior to that time, the area was open water of San Francisco Bay, and County records do not contain address or title records; as a result, interviews with prior owners were not possible.

8. ASTM E1527-05 DEVIATIONS

The City of Alameda is the current and past owner of the project site. The Supervising Planner for the City of Alameda for the Alameda Point project was contacted via email and voicemail in an effort to conduct an interview regarding the current and past conditions of the project site; an interview with the current owner, or owners representative, was not obtained. This is a deviation from the ASTM E1527-05 standard.

9. CONCLUSIONS AND RECOMMENDATIONS

- Prior to filling of San Francisco Bay, the project site was open water approximately 2,400 feet offshore from Alameda Island. The landside portion of the project site was created between 1942 and 1946 by filling (reportedly with mostly dredge spoils), and by 1946, the rail line crossing the site and W. Hornet Avenue had been constructed. By 1959, a building housing a snack-shop and a boat house had been constructed. In 1966 a replacement structure, Navy Building No. 385, was constructed and served as a restaurant and maintenance building for the recreational marina located on the adjacent parcel to the east. Reportedly, a hazardous materials storage locker was located in the eastern portion of the landside portion of the project site. The project site was cleared of aboveground structures, and subsurface utilities, such as sanitary sewer connections, were sealed, sometime during 2006 and/or early 2007. Fuel lines associated with the basewide fuel distribution systems have been removed from the project site by the Navy.

- The project site is entirely within a larger area variously designated Terminal 1, or Term-1. This irregularly shaped area is mapped as Salt March & Tide Lands (submerged lands) in the County of Alameda's Assessors/County Clerks maps, and as property of the City of Alameda. The City of Alameda leased these submerged lands to the Navy prior to their development as part of NAS. The NAS was closed in 1997, and the Navy's lease of the property expired, returning control of the property to the City of Alameda.

- The adjoining land uses to the north and east of the project site were identified as primarily paved open space uses, consisting of parking areas for aircraft during the 1940s to the 1960s, and for vehicle parking from the 1960s until Navy base closure proceedings in the 1990s. Since the Navy base closure, the adjacent areas have been primarily vacant except for vehicle parking. Pier 3, northwest of the site, has been converted to a permanent base for the USS Hornet, which now serves as a museum. To the east, the land adjoining Breakwater Beach has been become a park, and is managed by the East Bay Regional Parks system.

- Land uses associated with hazardous materials use were identified by the Navy as part of the base closure activities. These included railroad tracks, a former hazardous materials storage locker, and a building housing marina maintenance activities (including storage of pesticides). The project site was determined by the Navy to not warrant remedial actions to protect human health or the environment.

- Observations made during reconnaissance of the project site identified no current use of the project site, or land uses on adjoining properties that indicated current use of hazardous materials. No evidence of hazardous materials release was observed at the project site and adjoining properties.

- Historical use of the landside portion project site as a rail corridor and landscaped area are considered RECs due to the potential for releases of pesticides, herbicides, metals, and fuels. It is recommended that the rail corridor and landscaped areas be investigated to determine possible presence of organic (including TPH, SVOCs, PCBs, pesticides, and herbicides) and inorganic compounds in the subsurface. It is recommended that a licensed

professional develop a soil sampling program to assess potential effects to human health (including future users and construction workers) and the environment; in addition, the sampling approach should consider analytical requirements for soil management/disposal purposes, should the area be excavated as part of future development. Depending on the results of the investigation, additional sampling may be necessary to determine potential effects to underlying groundwater.

- The past on-site operation of a restaurant and marina maintenance facility, and the former presence of a locker for storage of hazardous materials, could have resulted in releases to the subsurface of organic (including TPH, pesticides, PCBs, SVOCs, and VOCs) and inorganic compounds, (including locations of drains or along utility lines); this is considered an REC. It is recommended that either during demolition of the existing foundation slab and other paved areas of the project site, or prior to removal, a licensed professional develop and implement a soil sampling program to determine potential effects to human health (including future users and construction workers) and the environment; in addition, the sampling should consider analytical requirements for soil management/disposal purposes, should the area be excavated as part of future development. Depending on the results of the investigation, additional sampling may be necessary to determine potential effects to underlying groundwater.

- Any dredging or removal of piers required for the waterside development could result in requirements for special handling of generated wastes. Sediment sampling was performed by the Navy within the waterside portion of the project site near Outfall N as part of the Breakwater Beach evaluation; this area could have been affected by historic stormwater discharges; this is considered an REC. It is recommended that sediment sample(s) be collected in accordance with the requirements of the Dredged Materials Management Office prior to future dredging. In addition, prior to removal of any piers, a management plan should be prepared to ensure management of treated wood in accordance with DTSC Treated Wood Waste guidance.

- The future user is not aware of any environmental clean-up liens or land use limitations associated with the site.

10. ENVIRONMENTAL PROFESSIONAL STATEMENT

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 40 CFR Part 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. The qualifications of the document preparers are provided in Appendix D.

11. LIMITATIONS

This Phase I ESA was performed to provide an understanding of the current environmental conditions at the project site. BASELINE's interpretations and conclusions regarding this

information and presented in this report are based on the expertise and experience of BASELINE in conducting similar assessments and current local, state, and federal regulations and standards.

BASELINE's objective is to perform our work with care, exercising the customary thoroughness and competence of earth science, environmental, and engineering consulting professionals, in accordance with the standard for professional services for a consulting firm at the time these services were provided. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental conditions and potential liability at a particular site. Therefore, BASELINE cannot act as insurers and cannot "certify or underwrite" that a site is free of environmental contamination, and no expressed or implied representation or warranty is included or intended in this report except that the work was performed within the limits prescribed with the customary thoroughness and competence of our profession.

The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration at the project site, analysis of the data, and re-evaluation of the findings, observations, conclusions, and recommendations expressed in the report.

The findings, observations, conclusions, and recommendations expressed by BASELINE in this report are limited by the scope of services and should not be considered an opinion concerning the compliance of any past or current owner or operator of the site with any federal, state, or local law or regulation. No warranty or guarantee, whether express or implied, is made with respect to the data reported or findings, observations, conclusions, and recommendations expressed in this report.

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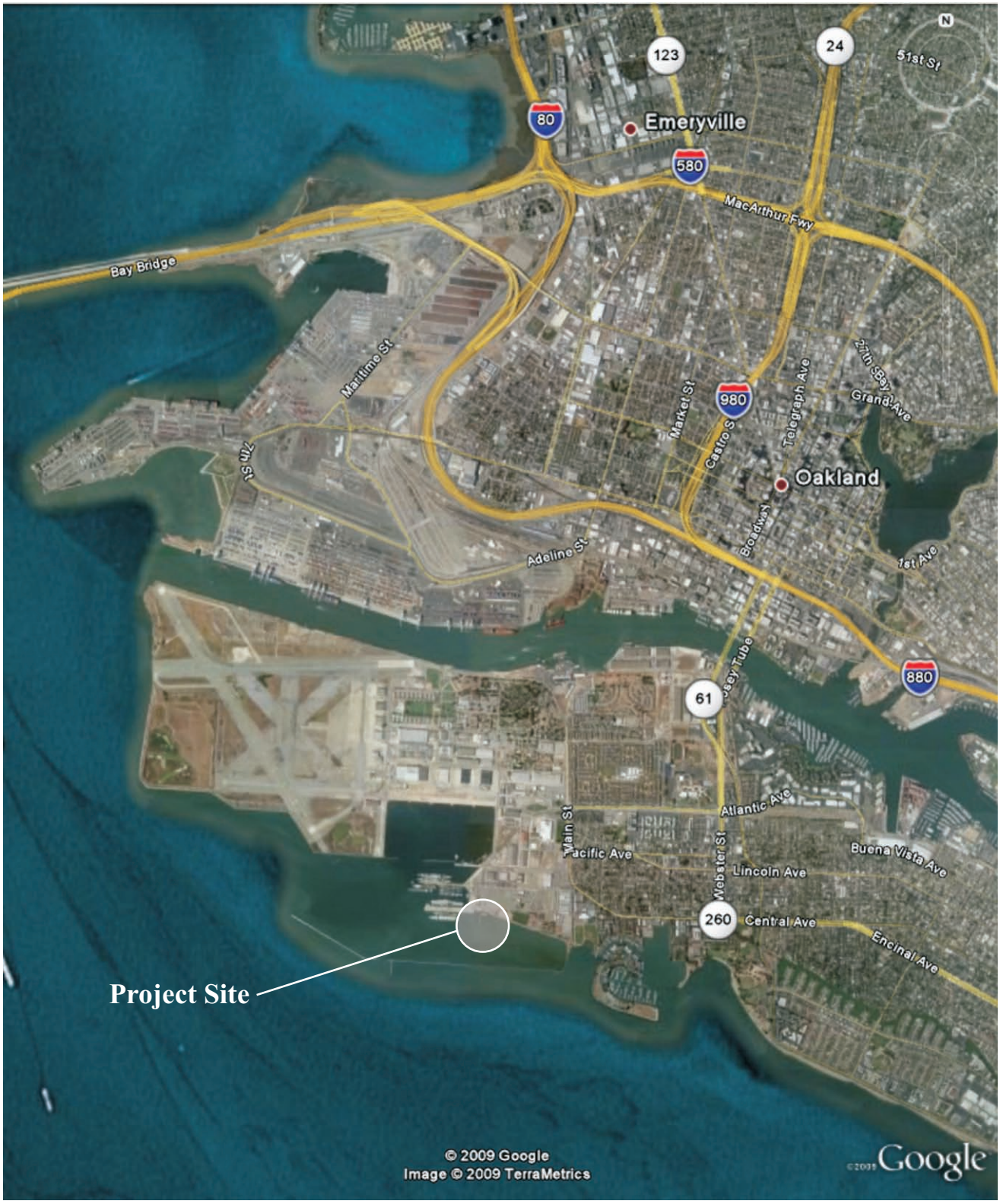
United States Environmental Protection Agency (U.S. EPA), 2009, Alameda Naval Air Station, EPA No. CA2170023236, Description and History, accessed 12-12-09 at: yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/ViewByEPAID/ca2170023236?OpenDocument

FIGURES

REGIONAL LOCATION

Figure 1



0 3000 Feet

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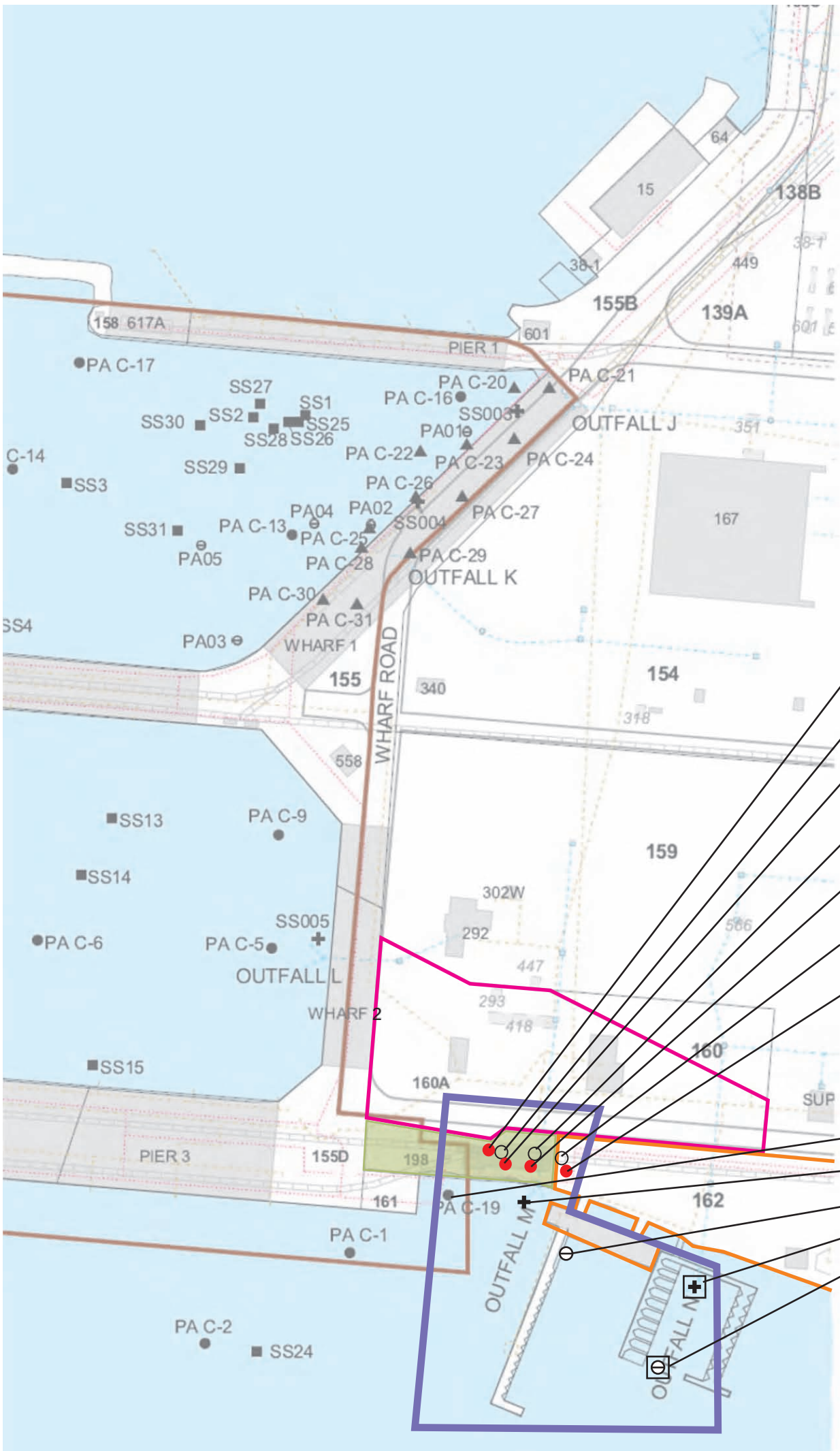
Y9374-00.01405.Fig1.cdr 1/6/10

PROJECT SITE AND ADJACENT LANDS

Figure 2



Legend

- Preliminary Project Site
- EBS Parcel 198
- EBS Parcel 162
- EBS Parcel 160 A
- Surface Soil Sample
- Subsurface Soil Sample
- IR SITE 24 Boundary
- Road
- Water
- 155 — EBS Parcel Boundary
- Historical Railroad
- 497 — Building or Structure (Present)
- 300 — Building or Structure (Removed)
- Manhole
- Catch Basin
- Storm Drain
- Sanitary Sewer Line
- Fuel Line (Removed)

HISTORICAL SEDIMENT SAMPLING LOCATIONS

- 1996
- 1997
- 1998
- 2002
- 2005
- 2006

Notes: EBS - Environmental Baseline Survey
IR - Installation Restoration (Program)

0 200 Feet

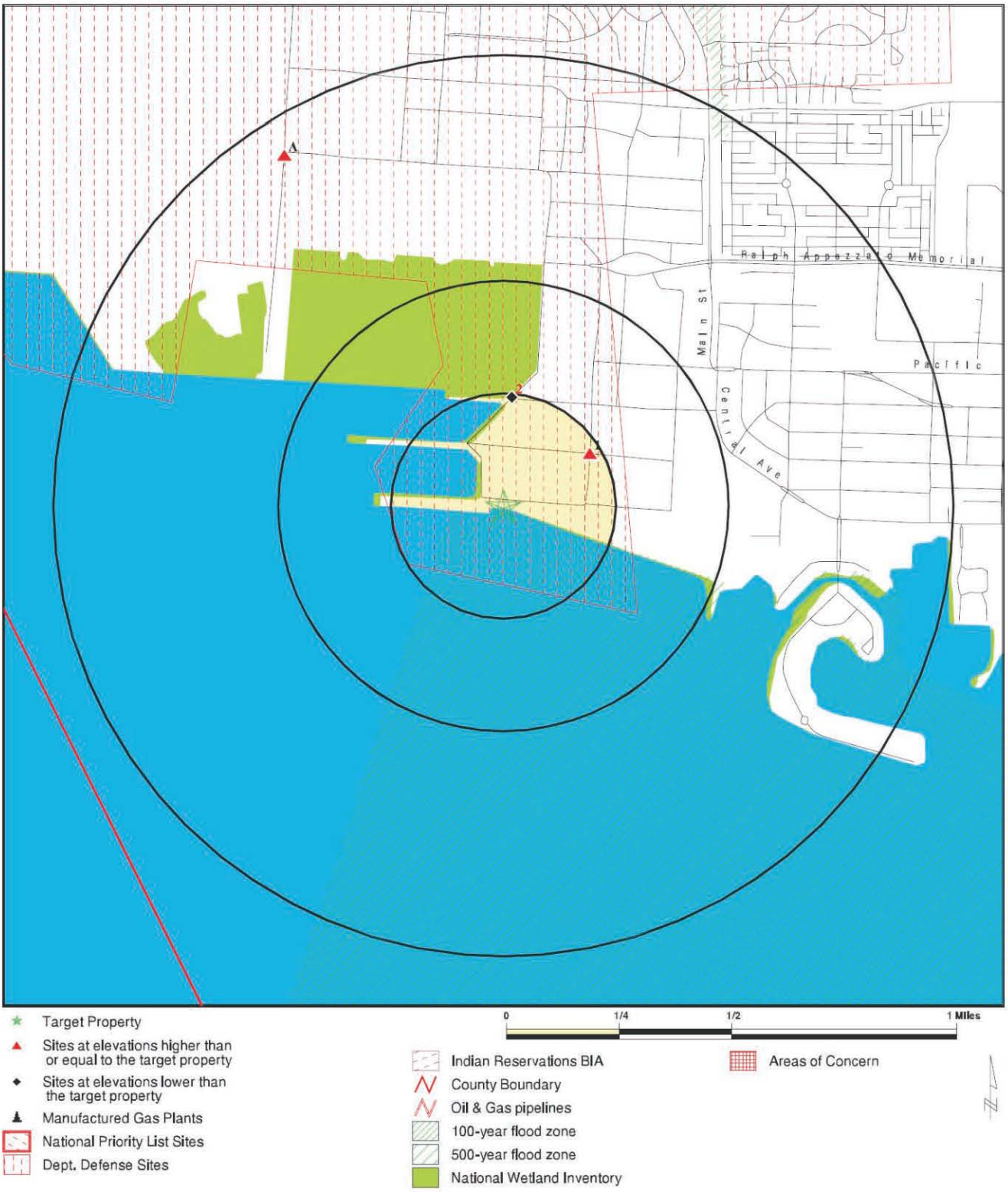
BASELINE

Source: Bechtel, 2008.

Y9374-00.01405.Fig2.V2.cdr 1/21/10

SITES WITH KNOWN HAZARDOUS MATERIALS USE AND/OR RELEASE WITHIN ONE-QUARTER MILE OF THE PROJECT SITE

Figure 3



Source: EDR 2009

BASELINE

Y9374-00.01405.Fig3.cdr 1/6/10

PHOTOGRAPHS FROM SITE RECONNAISSANCE Figure 4

Figure 4A: View west across remnant building foundations and slab.

Figure 4B: Concrete retaining wall faced with rip-rap and broken concrete.

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Y9374-00.01405.Fig4.cdr 1/6/10

PHOTOGRAPHS FROM SITE RECONNAISSANCE Figure 5

Figure 5A: Looking east across project site; 12-foot planter strip partially paved with access drive, rail line and junction, asphalt paving and lumber between rails, and asphalt between rails and foundation structure.

Figure 5B: Looking south across waterside of project site. Concrete pilings and dock remnants of marina, broken pilings and debris.

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APPENDICES

APPENDIX A

HISTORICAL LAND USE RESOURCES
(Portable Document Format on CD-ROM)

APPENDIX B

ENVIRONMENTAL DATABASE REPORT
(Portable Document Format on CD-ROM)

APPENDIX C

PHASE I USER QUESTIONNAIRE

PHASE I - USER QUESTIONNAIRE

Company: San Francisco Bay Area Water Emergency Transportation Authority (WETA)
Address: Pier 9, Suite 111, The Embarcadero, San Francisco, CA 94111

Name: John Sindzinski **Title:** Manager, Planning and Development, WETA

Signature: _____ **Date:** 1 / 4 / 2010

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

(1) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25). *Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?*
As part of the preparation of the Phase I ESA, BASELINE Environmental Consulting was employed by the User to research the recordation of environmental liens affecting the project site. BASELINE researched the project site through the Alameda County Clerks office. The project site does not have an assessors parcel number or street address; no record of a cleanup lien was found. The project site is within the Alameda Naval Air Station which is in the process of being closed and returned to civilian control. A parcel-specific environmental evaluation found the site was suitable for reclassifications and transfer to civilian use; no specific cleanup requirements were made based on the predicted reuse for the site as recreational use.

(2) Activity and land use limitations (AUL) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26). *Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?*
BASELINE Environmental Consulting was employed by the User to research the recordation of AULs affecting the property site. BASELINE researched the project site through the Alameda County Clerks office, the Alameda Reuse and Redevelopment Authority, and contracted with Environmental Database Research, Inc. to search for Activity and Land Use Limitations. A parcel-specific environmental evaluation found that the site was suitable for reclassifications and transfer to civilian; land use limitations were not specified in the evaluation.

(3) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).
As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?
No, the WETA does not have any specialized knowledge or experience that is related to the property or nearby properties.

(4) Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29).
Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?
Not applicable, the WETA will be leasing rather than purchasing the property.

(5) Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

(a.) Do you know the past uses of the property? The property was formerly part of a larger naval base facility and was used as a marina.

(b.) Do you know of specific chemicals that are present or once were present at the property? No.

(c.) Do you know of spills or other chemical releases that have taken place at the property? No.

(d.) Do you know of any environmental cleanups that have taken place at the property? No.

(6) The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?
Rail tracks and the foundation of a previous structure currently exist on the landside of the property in addition to docking facilities along the waterside. There are no obvious indicators at or near any of these facilities and structures that indicate the presence or likely presence of contamination at the property.

APPENDIX D

QUALIFICATIONS OF PREPARER

YANE NORDHAV

BASELINE

Yane Nordhav is the principal of BASELINE. She is the principal-in-charge for BASELINE projects related to hazardous materials management, development of remedial actions, site characterizations, and CEQA/NEPA documentation. She performs QA/QC functions for all projects at BASELINE. As principal investigator, she has managed and conducted groundwater investigations and remediation on major Superfund sites and local brownfields sites in California.

Through her work, she has developed an extensive working knowledge of regulatory requirements and established working relationships with regulatory agency staff on the state and local levels. She routinely works with Regional Water Quality Control Board, Department of Toxic Substances Control, and local agency staff to arrive at appropriate goals for risk-based cleanup of soil and groundwater resources.

She has managed major environmental audits and developed environmental programs for cities, ports, and industrial clients; her work has included development of strategies for waste management and minimization, and UST compliance programs. She also routinely provides litigation support and expert witness services to clients on sites that have been affected by historic land uses and require cleanup prior to future productive uses. In addition, Ms. Nordhav has been the project manager for the preparation of major environmental documents in California, including EIRs for controversial projects, ranging from open pit mines, hazardous waste disposal facilities, and new towns.

Recent Projects

- Sacramento Trapshoot Club, investigation, remediation, agency negotiations, Project Manager, 2004-2006
- Stockton Waterfront Brownfields Pilot Project, Project Manager, 2000-2006
- Bayview Transportation Improvements Project EIR/EIS, Hazardous Materials and Water Quality Technical Studies, Project Manager, 2004-2006
- Port of Oakland, Berths 25 and 26, investigation, remediation, agency negotiations, 2002-present

M.S., Geology, Cal State Hayward

B.A., Geology, U.C. Berkeley

40-hour OSHA training

PG No. 4009

25 years of experience

Presentations and Publications

Nordhav, Yane, 1998, Are Geologic and Seismic Impacts Significant, Unavoidable, or Mitigatable, in AEP Environmental Monitor, Summer.

Nordhav, Yane, 1997, Identification of Geologic Impacts - UC Berkeley, guest lecturer for Conservation of Natural Resources Department.

Nordhav, Yane, 1997, Moderator - Panel on Changes in Hazardous Waste Management, Association of Environmental Professionals Annual Meeting, San Francisco.

Schoenholz, Dan and Yane Nordhav, 1995, Construction of a Movie Theater at Lot 12: A Case Study in Reuse of a Former Manufactured Gas Plant Site; in Land Contamination and Reclamation 3(4).

Phase I and II Investigations and Land Use Decisions, presented at the Annual Meeting of the National Association of Housing and Redevelopment Officials, San Francisco, September 1992.

Closure and Clean-up of Underground Storage Tanks; a one-day training course presented at HAZMACON 1987 for Association of Bay Area Governments and to local implementing agencies throughout California for the State Water Resources Control Board.

The Long Journey from Discovery to Clean-Up of Superfund Sites, presented at the Annual Meeting of Association of Engineering Geologists, Boston, MA, 1984; published in the Bulletin of the Association of Engineering Geologists, Vol. 12:2, May 1986.

RALPH E. RUSSELL

BASELINE

Ralph Russell is an Environmental Analyst with over 11 years of experience in environmental permitting and planning. He has extensive experience in planning and permitting of residential and commercial development. He also has experience conducting CEQA analyses of a variety of projects including proposed residential, commercial, industrial, and infill projects and timber harvest plans.

As the Director of Housing Development for a non-profit dedicated to providing affordable multi-unit housing for low-income seniors and disabled persons, he supervised the processes of site selection, negotiation and land acquisition as well as project design, governmental approvals and permitting. He worked with the Department of Housing and Urban Development (HUD) and the City of Petaluma Housing Office to secure Community Development Block Grants (CDBG) and additional local financing. He supervised the process of site development and assessment with the attendant issues related to environmental concerns, zoning and general plan amendments. Mr. Russell acted on behalf of the Board of Directors as point person for interaction with City and County Planning and Community Development Departments and ensured construction program compliance with General and Specific Plan requirements.

While working with the California North Coast Regional Water Quality Control Board, Mr. Russell participated in the 'first review' of dozens of Timber Harvest Plans submitted for logging projects in Sonoma and Mendocino counties. In addition, Mr. Russell worked with NCRWQCB senior staff conducting pre-harvest inspection field reviews of Timber Harvest Plans, hazardous materials and soil contamination investigations, water quality sampling and active timber harvest operations reviews.

Mr. Russell has extensive experience conducting CEQA review for a variety of projects in the Bay Area. He specializes in geology, hydrology, and hazardous materials impact analyses. He is thoroughly familiar with the geological environment and geologic hazards facing developments in a seismically active region and the regulatory requirements addressing geologic hazards through state regulations and local ordinances. Mr. Russell is also experienced in performing hydrologic assessments of developments and evaluating compliance with stormwater regulations for construction and post-construction conditions. Mr. Russell has conducted numerous Phase I investigations and assesses public health impacts associated with developments in Brownfields areas.

Recent Projects

- MacArthur BART Transit Village, Oakland, Technical Lead on Geology and Hydrology EIR Sections, 2007 – 2008.
- San Francisco General Hospital Seismic Rebuild, Technical Lead on Geology and Hydrology EIR Sections, 2007 – 2008.
- First Street Project, Petaluma, Phase I Environmental Site Assessment, Author, 2005.

B.A., Environmental Studies: Environmental Conservation and Regional Planning, Geology Minor, Sonoma State University

AICP

40-Hour OSHA training

11 years of experience

Presentations and Publications

2002 Solar Sebastopol Initiative, Co-author.
A field study and proposal to supply up to 25 percent of the electricity consumed in Sebastopol from photovoltaic sources. Sonoma State University and the City of Sebastopol, CA.

Appendix D

San Francisco Bay Plan Consistency Analysis

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
Protection of the Shoreline		
Policy 2: Riprap revetments, the most common shoreline protective structure, should be constructed of properly sized and placed material that meet sound engineering criteria for durability, density, and porosity. Armor materials used in the revetment should be placed according to accepted engineering practice, and be free of extraneous material, such as debris and reinforcing steel. Generally, only engineered quarrystone or concrete pieces that have either been specially cast or carefully selected for size, density, durability, and freedom of extraneous materials from demolition debris will meet these requirements. Riprap revetments constructed out of other debris materials should not be authorized.	The proposed project would construct a concrete secant pile wall, the details of which would be determined following geotechnical explorations and analysis. The seawall would be constructed of properly sized and placed material that meets engineering criteria for durability, density, and porosity. Construction methods and materials proposed would be required to comply with local, state, and federal regulations.	Yes
Water-Related Industry		
Policy 1: Sites designated for both water-related industry and port uses in the Bay Plan should be reserved for those industries and port uses that require navigable, deep water for receiving materials or shipping products by water in order to gain a significant transportation cost advantage.	The project site is not designated as a water-related industry or port area (in Plan Map 4) in the Bay Plan.	Yes
Policy 3. Land reserved for both water-related industry and port use will be developed over a period of years. Other uses may be allowed in the interim that, by their cost and duration, would not preempt future use of the site for waterrelated industry or port use.	The project site is not designated as a water-related industry or port area (in Plan Map 4) in the Bay Plan. However, the proposed project would construct a centralized facility that serves the maintenance requirements of the WETA ferry fleet, and is consistent with City of Alameda General Plan.	Yes
Policy 4: Water-related industry and port sites should be planned and managed so as to avoid wasteful use of the limited supply of waterfront land. The following principles should be followed to the maximum extent feasible in planning for water-related industry and port use: a) Extensive use of the shoreline for storage of raw materials, fuel, products, or waste should not be permitted on a long-term basis. If required, such storage areas should generally either be at right angles to the main direction of the shoreline or be as far inland as feasible, so other use of the shoreline may be made possible. b) Where large acreages are available, site planning should strive to provide access to the shoreline for all future plants and port facilities that might locate in the same area. (As a general rule, therefore, the longest dimension of plant sites should be at right angles to the shoreline.) Marine terminals should also be shared	The project site is not designated as a water-related industry or port area (in Plan Map 4) in the Bay Plan. The proposed project would reuse a former industrial site consistent with City general planning designations at Alameda Point.	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
as much as possible among industries and port uses. c) Waste treatment ponds for water-related industry and port uses should occupy as little land as possible, be above the highest recorded level of tidal action, and be as far removed from the shoreline as possible. d) Any new highways, railroads, or rapid transit lines in existing or future water-related industrial and port areas should be located sufficiently far away from the waterfront so as not to interfere with industrial use of the waterfront. New access roads to waterfront industrial and port areas should be approximately at right angles to the shoreline, topography permitting.		
Policy 5: Water-related industry and port uses should be planned so as to make the sites attractive (as well as economically important) uses of the shoreline. The following criteria should be employed to the maximum extent possible: a) Air and water pollution should be minimized through strict compliance with all relevant laws, policies and standards. Mitigation, consistent with the Commission's policy concerning mitigation, should be provided for all unavoidable adverse environmental impacts. b) When bayfront hills are used for water-related industries, terracing should generally be required and leveling of the hills should not be permitted. c) Important Bay overlook points, and historic areas and structures that may be located in water-related industrial and port areas, should be preserved and incorporated into the site design, if at all feasible. In addition, shoreline not actually used for shipping facilities should be used for some type of public access or recreation, to the maximum extent feasible. Public areas need not be directly accessible by private automobiles with attendant parking lots and driveways; access may be provided by hiking paths or by forms of public transit such as elephant trains or aerial tramways. d) Regulations, tax arrangements, or other devices should be drawn in a manner that encourages industries and port uses to meet the	The project site is not designated as a water-related industry or port area (in Plan Map 4) in the Bay Plan. Refer to Section III, Air Quality and Section IX, *Hydrology and Water Quality* for a discussion of air and water regulatory compliance requirements.	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
foregoing objectives		
Policy 6: The Commission, together with the relevant local governments, should cooperatively plan for use of vacant and underutilized water-related industrial priority use areas. Such planning should include regional, state and federal interests where appropriate, as well as public and special interest groups. Resulting plans should include: (a) a program for joint use of waterfront facilities where this is beneficial and feasible; (b)-a regulatory or management program for reserving the entire waterfront site or parcel for water-related industrial and port use; and (c) a program for minimizing the environmental impacts of future industrial and port development. Such plans, if approved by the relevant local governments and by the Commission, could be amended into the Bay Plan as special area plans.	The project site is not located in a water-related industrial priority use area; however, the proposed project does include regional, state and federal interests by constructing a centralized facility to maintain WETA's ferry fleet as well as an EOC to serve passengers and sustain water transit service for emergency response and recovery.	Yes
Transportation		
Policy 1: Because of the continuing vulnerability of the Bay to filling for transportation projects, the Commission should continue to take an active role in Bay Area regional transportation and related land use planning affecting the Bay, particularly to encourage alternative methods of transportation and land use planning efforts that support transit and that do not require fill. The Metropolitan Transportation Commission, the California Department of Transportation, the California Transportation Commission, the Federal Highway Administration, county congestion management agencies and other public and private transportation authorities should avoid planning or funding roads that would require fill in the Bay and certain waterways.	The proposed project is part of WETA's transbay ferry expansion program by constructing a centralized facility that serves WETA's ferry fleet, OCC, and EOC, and therefore supports alternative methods of transportation.	Yes
Policy 4: Transportation projects on the Bay shoreline and bridges over the Bay or certain waterways should include pedestrian and bicycle paths that will either be a part of the Bay Trail or connect the Bay Trail with other regional and community trails. Transportation projects should be designed to maintain and enhance visual and physical access to the Bay and along the Bay shoreline.	In consultation with BCDC, the project proposes to implement one, or a combination thereof, of the following three Bay Trail access improvement options to improve public access and recreational opportunities in and around Alameda Point: 1. Contribute funding to provide signage, striping, and plastic bollards to connect the existing Bay Trail to an interim trail around the secure MARAD facilities. 2. Establish a new Bay Trail overlook area that would include benches, a decorative fence, and landscaping	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
	at the southeast portion of the existing park. 3. Widen sidewalks on West Hornet Avenue (with landscaping) and provide an additional bike lane leading towards the current location of the USS Hornet. Refer to Section I, Aesthetics, for a discussion on impacts to visual resources in the project area.	
Policy 5: Ferry terminals should be sited at locations that are near navigable channels, would not rapidly fill with sediment and would not significantly impact tidal marshes, tidal flats or other valuable wildlife habitat. Wherever possible, terminals should be located near higher density, mixed-use development served by public transit. Terminal parking facilities should be set back from the shoreline to allow for public access and enjoyment of the Bay.	The access channel for the proposed facility consists of the same channel used by the MARAD fleet to access Alameda Point. Refer to Section IV, Biological Resources, for a discussion on impacts to sensitive biological resources in the project area.	Yes
Public Access		
Policy 2: In addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline, whether it be for housing, industry, port, airport, public facility, wildlife area, or other use, except in cases where public access would be clearly inconsistent with the project because of public safety considerations or significant use conflicts, including unavoidable, significant adverse effects on Bay natural resources. In these cases, in lieu access at another location preferably near the project should be provided.	Public access to the site would be inconsistent with public safety considerations. In compliance with US Coast Guard and WETA requirements the site would be fully fenced for safety and security. However, in partnership with the City of Alameda, WETA would make improvements to the Bay Trail to improve public access and trail connectivity throughout Alameda Point. The City of Alameda plans to complete the Bay Trail from the vicinity of the project through to the new location of USS Hornet outside the secure MARAD facility. Thus public access around the site would be maintained through West Hornet Avenue and the Bay Trail and access would be provided to the maximum extent feasible consistent with the appropriate need for safety and security relative to both WETA's facility and for MARAD.	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
Policy 3: Public access to some natural areas should be provided to permit study and enjoyment of these areas. However, some wildlife are sensitive to human intrusion. For this reason, projects in such areas should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided.	As part of the project, and in partnership with the City of Alameda, WETA would make improvements to the Bay Trail to improve public access and trail connectivity throughout Alameda Point, including providing signage and striping along the shoreline.	Yes
Policy 4: Public access should be sited, designed and managed to prevent significant adverse effects on wildlife. To the extent necessary to understand the potential effects of public access on wildlife, information on the species and habitats of a proposed project site should be provided, and the likely human use of the access area analyzed. In determining the potential for significant adverse effects (such as impacts on endangered species, impacts on breeding and foraging areas, or fragmentation of wildlife corridors), site specific information provided by the project applicant, the best available scientific evidence, and expert advice should be used. In addition, the determination of significant adverse effects may also be considered within a regional context. Siting, design and management strategies should be employed to avoid or minimize adverse effects on wildlife, informed by the advisory principles in the Public Access Design Guidelines. If significant adverse effects cannot be avoided or reduced to a level below significance through siting, design and management strategies, then in lieu public access should be provided, consistent with the project and providing public access benefits equivalent to those that would have been achieved from on-site access. Where appropriate, effects of public access on wildlife should be monitored over time to determine whether revisions of management strategies are needed.	The proposed improvements to the Bay Trail would not cause significant adverse effects on wildlife. Refer to Section IV, *Biological Resources*, for a discussion on impacts to sensitive biological resources in the project area.	Yes
Policy 5: Whenever public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed. This should be done wherever appropriate by requiring dedication of fee title or easements at no cost to the public, in the same manner that streets, park sites, and school sites are dedicated to the public as part of the subdivision process in cities and counties.	The proposed project would implement one, or a combination thereof, three Bay Trail access improvement options to improve public access and recreational opportunities in and around Alameda Point. In addition, the project is required to obtain a BCDC permit as a condition of project approval; therefore, the project would be consistent with this Bay Plan policy.	Yes
Policy 6: Public access improvements provided as a condition of any approval should be consistent with the project and the physical environment, including protection of Bay natural resources, such as aquatic life, wildlife and plant communities, and provide for the public's safety and convenience. The improvements should be designed and built	The proposed project would implement one, or a combination thereof, three Bay Trail access improvement options to improve public access and recreational opportunities in and around Alameda Point. In addition, the project is required to obtain a BCDC permit as a	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
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 feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs.	condition of project approval; therefore, the project would be consistent with this Bay Plan policy	
Policy 7: In some areas, a small amount of fill may be allowed if the fill is necessary and is the minimum absolutely required to develop the project in accordance with the Commission's public access requirements.	The overwater coverage of the existing structures at the project site is approximately 20,220 SF and the total overwater coverage of the new facility is estimated to be approximately 20,000 SF; therefore, the project would slightly decrease overwater coverage areas in the Bay.	Yes
Policy 8: Access to and along the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available. Diverse and interesting public access experiences should be provided which would encourage users to remain in the designated access areas to avoid or minimize potential adverse effects on wildlife and their habitat.	The proposed project would implement one, or a combination thereof, three Bay Trail access improvement options to improve public access and recreational opportunities in and around Alameda Point.	Yes
Policy 10: Federal, state, regional, and local jurisdictions, special districts, and the Commission should cooperate to provide appropriately sited, designed and managed public access, especially to link the entire series of shoreline parks, regional trail systems (such as the San Francisco Bay Trail) and existing public access areas to the extent feasible without additional Bay filling and without significant adverse effects on Bay natural resources. State, regional, and local agencies that approve projects should assure that provisions for public access to and along the shoreline are included as conditions of approval and that the access is consistent with the Commission's requirements and guidelines.	The City of Alameda plans to complete the Bay Trail from the vicinity of the project through to the new location of USS Hornet outside the secure MARAD facility. As part of the proposed project, WETA would make improvements to the Bay Trail to maintain public access to the maximum extent feasible, consistent with the appropriate need for safety and security relative to both WETA's facility and for MARAD.	Yes
Policy 11: The Public Access Design Guidelines should be used as a guide to siting and designing public access consistent with a proposed project. The Design Review Board should advise the Commission regarding the adequacy of the public access proposed.	WETA would be required to obtain a permit from BCDC as a condition of project approval and BCDC's Design Review Board would review, evaluate, and advise on the proposed design of the project to determine accordance with Bay Plan policies. Therefore, the proposed project is consistent with this Bay Plan policy.	Yes
Dredging		
Policy 1: Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time to achieve the	The proposed project would require approximately 26,000 cubic yards of dredged material; maintenance dredging would be required once every 5 to 10 years.	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
LTMS goal of limiting in-Bay disposal volumes to a maximum of one million cubic yards per year. The LTMS agencies should implement a system of disposal allotments to individual dredgers to achieve this goal only if voluntary efforts are not effective in reaching the LTMS goal. In making its decision regarding disposal allocations, the Commission should confer with the LTMS agencies and consider the need for the dredging and the dredging projects, environmental impacts, regional economic impacts, efforts by the dredging community to implement and fund alternatives to in-Bay disposal, and other relevant factors. Small dredgers should be exempted from allotments, but all dredgers should comply with policies 2 through 12.	Dredge material would be disposed of in either the SF-DOD or Hamilton. Soil sampling would be conducted before disposal of dredged material. The amount of dredged material compared with the total estimated by the LTMS program is minimal and there is adequate capacity at potential disposal locations to accommodate a small increase in dredge material. Furthermore, the proposed project would be required to comply with DMMO regulations.	
Policy 2: Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose, such as navigational safety; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions established by the California Department of Fish and Game, the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service, or through other appropriate measures; (d) the siting and design of the project will result in the minimum dredging volume necessary for the project; and (e) the materials would be disposed of in accordance with Policy 3.	The proposed project would be required to comply with all applicable local, state, and federal requirements. WETA would obtain permits from BCDC, USACE, RWQCB, USFWS, and NMFS as a condition of project approval. Refer to Table 2-1 for permitting requirements.	Yes
Policy 3: Dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways. Except when reused in an approved fill project, dredged material should not be disposed in the Bay and certain waterways unless disposal outside these areas is infeasible and the Commission finds: (a) the volume to be disposed is consistent with applicable dredger disposal allocations and disposal site limits adopted by the Commission by regulation; (b) disposal would be at a site designated by the Commission; (c) the quality of the material disposed of is consistent with the advice of the San Francisco Bay Regional Water Quality Control Board and the inter-agency Dredged Material Management Office (DMMO); and (d) the period of disposal is consistent with the advice of the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.	Dredge material would be disposed of in either the SF-DOD or Hamilton. WETA would be required to comply with BCDC and DMMO regulations.	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
Policy 4: If an applicant proposes to dispose dredged material in tidal areas of the Bay and certain waterways that exceeds either disposal site limits or any disposal allocation that the Commission has adopted by regulation, the applicant must demonstrate that the potential for adverse environmental impact is insignificant and that non-tidal and ocean disposal is infeasible because there are no alternative sites available or likely to be available in a reasonable period, or because the cost of disposal at alternate sites is prohibitive. In making its decision whether to authorize such in-Bay disposal, the Commission should confer with the LTMS agencies and consider the factors listed in Policy 1.	Dredge material would be disposed of in either the SF-DOD or Hamilton. WETA would be required to comply with BCDC and DMMO regulations.	Yes
Policy 5: To ensure adequate capacity for necessary Bay dredging projects and to protect Bay natural resources, acceptable non-tidal disposal sites should be secured and the Deep Ocean Disposal Site should be maintained. Further, dredging projects should maximize use of dredged material as a resource consistent with protecting and enhancing Bay natural resources, such as creating, enhancing, or restoring tidal and managed wetlands, creating and maintaining levees and dikes, providing cover and sealing material for sanitary landfills, and filling at approved construction sites.	Dredge material would be disposed of in either the SF-DOD or Hamilton. WETA would be required to comply with BCDC and DMMO regulations.	Yes
Policy 6: Dredged materials disposed in the Bay and certain waterways should be carefully managed to ensure that the specific location, volumes, physical nature of the material, and timing of disposal do not create navigational hazards, adversely affect Bay sedimentation, currents or natural resources, or foreclose the use of the site for projects critical to the economy of the Bay Area.	Dredging (both new and maintenance) activities would be conducted during sensitive environmental work windows per LTMS guidance. WETA would obtain RWQCB, USACE, and BCDC permits as a condition of project approval.	Yes
Policy 7: All proposed channels, berths, turning basins, and other dredging projects should be carefully designed so as not to undermine the stability of any adjacent dikes, fills or fish and wildlife habitats	Dredging (both new and maintenance) activities would be conducted during sensitive environmental work windows per LTMS guidance. WETA would obtain RWQCB, USACE, and BCDC permits as a condition of project approval.	Yes
Policy 9: To protect underground fresh water reservoirs (aquifers): (a) all proposals for dredging or construction work that could penetrate the mud "cover" should be reviewed by the San Francisco Bay Regional Water Quality Control Board and the State Department of Water Resources; and (b) dredging or construction work should not be permitted that might reasonably be expected to damage an underground water reservoir. Applicants for permission to dredge should provide additional data on	The proposed project would be required to comply with RWQCB and BCDC requirements as a condition of project approval.	Yes

Bay Plan Policy	Land Use Consistency Analysis	Project Consistent With Policy?
groundwater conditions in the area of construction to the extent necessary and reasonable in relation to the proposed project.		
Fills in Accord with the Bay Plan		
Fills in Accord with Bay Plan. A proposed project should be approved if the filling is the minimum necessary to achieve its purpose, and if it meets one of the following three conditions: a) The filling is in accord with the Bay Plan policies as to the Bay-related purposes for which filling may be needed (i.e., ports, water-related industry, and water-related recreation) and is shown on the Bay Plan maps as likely to be needed; or b) The filling is in accord with Bay Plan policies as to purposes for which some fill may be needed if there is no other alternative (i.e., airports, roads, and utility routes); or c) The filling is in accord with the Bay Plan policies as to minor fills for improving shoreline appearance or public access.	The overwater coverage of the existing structures at the project site is approximately 20,220 SF and the total overwater coverage of the new facility is estimated to be approximately 20,000 SF; therefore, the project would slightly decrease overwater coverage areas in the Bay. The proposed project would be required to obtain a BCDC and USACE permit as a condition for project approval.	Yes