Oyster Bay Bridge at Oyster Bay Slough [BA]

Biological Assessment

Oyster Bay Bridge at Oyster Bay Slough
City of San Leandro, Alameda County, California
District 4

May 22, 2008

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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STATE OF CALIFORNIA

Department of Transportation

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Summary of Findings, Conclusions and Determinations

The City of San Leandro and East Bay Regional Park District propose to fill a critical gap in the San Francisco Bay Trail located in the City of San Leandro, in Alameda County, California. The Project includes the construction of a 348-foot pedestrian/bicycle bridge and a 630-foot long portion of trail. The bridge would span Oyster Bay Slough, a shallow, remnant embayment of the historic Bay located between Oyster Bay Regional Shoreline to the south, and the City of San Leandro wastewater treatment facility, Oakland International Airport, and Galbraith Golf Course to the north. Once completed, the Oyster Bay Bridge at Oyster Bay Slough would close the final gap in contiguous San Francisco Bay Trail extending from Oakland to Hayward, and would provide greatly increased public access to the Bay shoreline in what is now an inaccessible area.

The proposed project will have no effect on federal-listed plant species. The proposed project is not likely to adversely affect four federal-listed wildlife species, including salt marsh harvest mouse (*Reithrodontomys raviventris*), California clapper rail (*Rallus longirostris obsoletus*), Central Valley fall/late fall-run Chinook salmon (*Oncorhynchus tshawytscha*), and Central California coastal steelhead (*Oncorhynchus mykiss*). The Project Area is not located within any currently designated Critical Habitat for any federal-listed species. The proposed project is not likely to adversely affect Essential Fish Habitat (EFH) within the Project Area.

Avoidance and minimization efforts will be implemented to mitigate for potential direct and indirect effects to federal-listed species resulting from the proposed Project. Construction activities such as pile-driving will be performed within strict U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA/NMFS)-approved work windows. Standard Best Management Practices (BMPs) will be implemented as part of the proposed Project to minimize sedimentation and erosion and to protect water quality in seasonal marsh wetlands and “other waters” in and adjacent to the Project Area.

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List of Abbreviated Terms

BCDC	San Francisco Bay Conservation and Development Commission
BMPs	Standard Best Management Practices
CALTrans	California Department of Transportation
CEQA	California Environmental Quality Act
CDFG	California Department of Fish and Game
CIDH	cast-in-drilled-hole
CISS	cast-in-steel-shell
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	Unites States Army Corps of Engineers
DOT	United States Department of Transportation
EFH	Essential Fish Habitat
ESA	Environmentally Sensitive Area
ESU	Evolutionarily Significant Unit
FAA	Federal Aviation Administration
FAC	Facultative wetland-classified vegetation
IS/MND	Initial Study/Mitigated Negative Declaration
MHHW	Mean Higher High Water
NAVD	North American Vertical Datum
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NRCS	National Resources Conservation Service
OBL	Obligate wetland-classified vegetation
RWQCB	San Francisco Bay Regional Water Quality Control Board
SWPPP	Storm Water Pollution Prevention Plan
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey

Chapter 1. Introduction

The purpose of this biological assessment is to provide technical information and to review the proposed Oyster Bay Bridge at Oyster Bay Slough (Project) located in San Leandro, Alameda County, California (Project Area) in sufficient detail to determine to what extent the proposed project may affect threatened, endangered, or proposed species. The biological assessment is prepared in accordance with legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S. C 1536(c)) and with Federal Highway Administration and California Department of Transportation regulation, policy and guidance. The document presents technical information upon which later decisions regarding project impacts are developed.

1.1. Project History

The purpose of the Project is to close the final gap in the San Francisco Bay Trail from Oakland to Hayward, Alameda County. The San Francisco Bay Trail is a pedestrian and bicycle trail system that, when completed, will circumnavigate San Francisco Bay. The Bay Trail provides Bay shoreline pedestrian access in many areas of San Francisco Bay that have been previously inaccessible due to development and other use. Project objectives include the following:

- Provide an architecturally pleasing bridge across Oyster Bay Slough;
- Provide a bridge that requires low maintenance;
- Provide a bridge that can support a 10,000 pound emergency vehicle;
- Minimize environmental impact;
- Provide an overall bridge length of approximately 348 feet, with a railing height of 54 inches, and a bridge clear travel lane of 10 feet;
- Provide a minimum clearance of five feet above Mean Higher High Water (MHHW);
- Connect the newly-constructed Oyster Bay Bridge with existing Bay Trail facilities by constructing a new 630-foot stretch of Bay Trail on an existing levee-top; and
- Design the Bay Trail connection to comply with applicable trail standards and allow the continued use of the levee by City of San Leandro maintenance vehicles.

1.2. Project Description

The proposed Oyster Bay Bridge at Oyster Bay Slough (Project) is located south of the Oakland International Airport in San Leandro, Alameda County, California (Figure 1, Figure 2). The Project includes the construction of a pedestrian/bicycle bridge and 630 feet of paved trail to connect the Oyster Bay Regional Shoreline, located in the city of San Leandro, with existing Bay Trail facilities that are located to the north of Oyster Bay Slough on Port of Oakland property. The Project will fill the final link in the regional Bay Trail system and would provide contiguous Bay Trail facilities from Oakland to Hayward.

Oyster Bay Slough Bridge

A four-span steel bridge supported on large diameter concrete-filled steel piles has been recommended to meet the construction, architecture, and engineering objectives of the project. With only three pier piles, the design will minimize environmental impact and foundation work in the slough channel. Three large diameter steel piles driven in to the tidal mudflat substrate of Oyster Bay Slough will provide the lateral strength and stiffness needed for seismic loads. No treated timber products will be used in bridge construction activities. Project design plans are provided in Appendix A.

The proposed bridge will be approximately 348 feet long, with a clear travel width of ten feet and a railing height of 54 inches. The bridge structure consists of four prefabricated steel truss pieces, each measuring approximately 87 feet in length. The bridge will be anchored to abutments on the south and north sides of Oyster Bay Slough by short, seat type abutments on precast concrete pile foundations. The elevation of the bridge abutments will be 15.0 feet on the north side and 17.4 feet on the south side (elevations in NAVD 88).

The bridge structure will be supported by three pier piles consisting of four-foot diameter cast-in-steel-shell (CISS) concrete piles driven into the mudflat substrate of Oyster Bay Slough. The CISS piles will require significantly more construction effort than precast piles (e.g. the requirement to drill and remove bay mud inside the steel casing before casting with concrete can occur). However, precast piles that would meet the engineering objectives at this location would require an 80-foot crane to install (Mark Thomas & Co., 2004b). CISS piles are proposed because they can be installed with a smaller crane, which will minimize equipment height encroachment into the regulated Federal Aviation Administration (FAA) airspace during pile-driving activities. CISS piles can be driven in shorter sections with a smaller crane and the

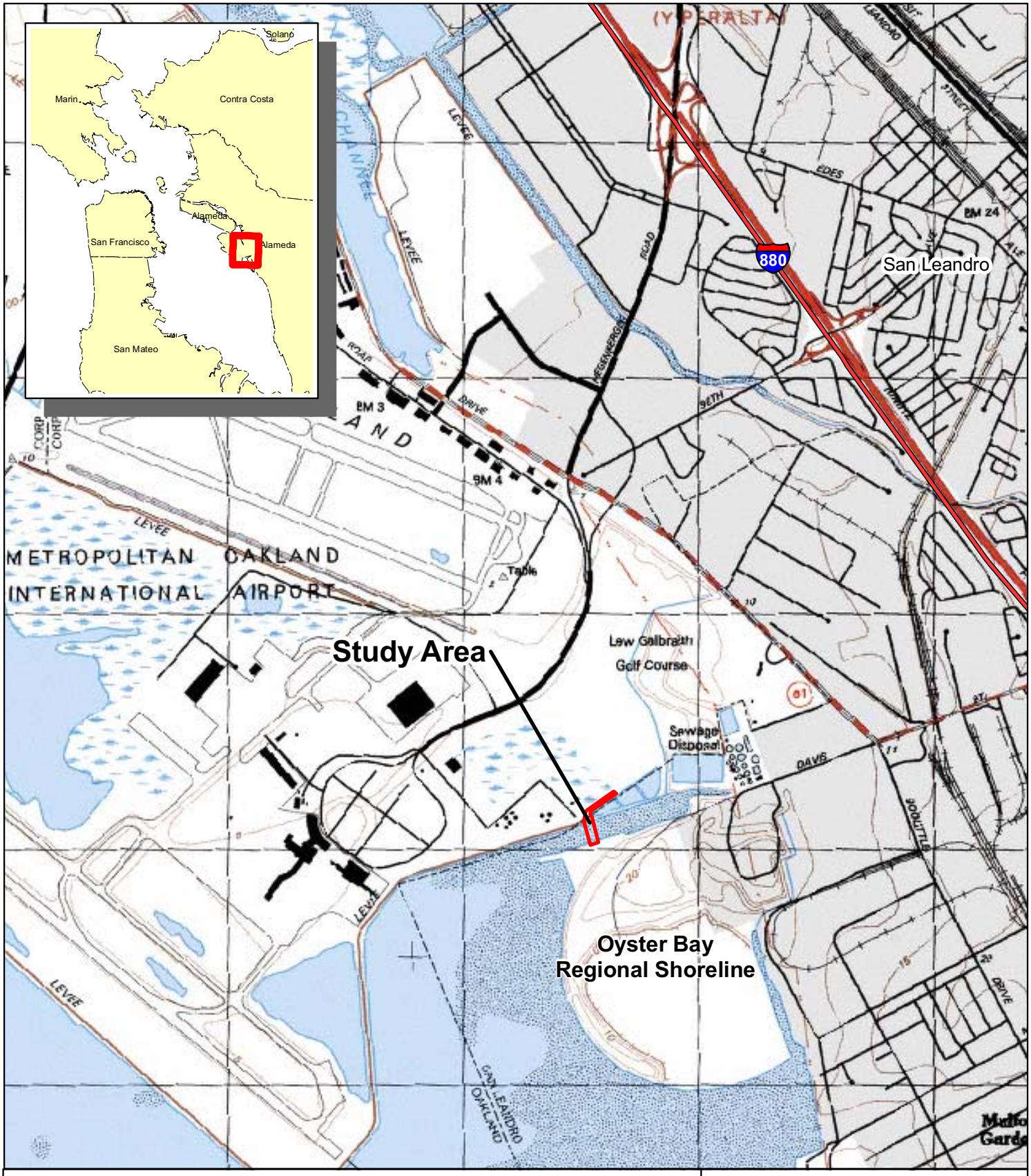

Figure 1. Study Area Location Map

Bay Trail Bridge at Oyster Bay Slough
San Leandro, California

N

0 1,000 2,000 Feet

wra
ENVIRONMENTAL CONSULTANTS

Date: September 2007
Basemap: USGS Topo Quad
Map By: Derek Chan
Filepath: L:\Acad 2000Files\13000\13056\GIS\Arcmap\Fig1_LocMap_20070921.mxd

VICINITY AERIAL MAP FOR THE BAY TRAIL BRIDGE

Figure 2

Source: City of San Leandro.

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sections welded together, thereby minimizing intrusion into the regulated FAA airspace surrounding the Port of Oakland.

Two possible build options are proposed to construct the Oyster Bay Bridge. The first option uses barges to float bridge construction equipment into Oyster Bay Slough. Construction work would be conducted from these barges. The other option involves the construction of a temporary trestle adjacent to the bridge alignment. Construction work would be conducted from this trestle, and the trestle would be dismantled after the bridge was complete. The trestle construction option is meant to provide a contingency option in the event that barges cannot be navigated into the shallow tidal channel of Oyster Bay Slough.

Although the permanent fill impacts associated with the Oyster Bay Slough Bridge support pilings will result from bridge construction regardless of the construction option used, both construction options have different temporary impacts associated with them. Both the barge construction option and the trestle construction option and a discussion of permanent and temporary impacts associated with each option are described in detail below.

Barge Construction Option

Under the barge construction option, bridge construction materials will be floated in on shallow barges, and piers will then be driven by a barge crane with a pile-driving rig. The CISS piling sections and four bridge trusses will be transported to the site via flexi-float construction barges which are capable of navigating very shallow depths. The flexi-float barges will bring the bridge piling and truss pieces into the channel of Oyster Bay Slough during high tide, and will sit on the mudflat bottom of the channel at low tide. A barge crane will be used to drive in the bridge piles and to lift the four bridge truss segments into place. The construction contractor will determine if the barges will be able to navigate the shallow waters of Oyster Bay Slough. If this is not possible, then the trestle construction option (discussed below) will be employed for bridge construction.

According to the engineering report for the bridge (Creegan & D'Angelo 2004), the following equipment and construction methods will be used for the barge construction option. For the bridge pilings, flexi-float barges will be floated and towed to the north pier site then ballasted to temporarily rest on the slough bottom. A pile driver and hammer will be transported by truck to the construction site and will be driven onto the flexible float platform to access the pier location. The large diameter steel pipe for the CISS pilings will be delivered via flexi-float barge. The north piling will be installed with a pile-driving hammer. The barges and pile rig will then be moved to the middle and south piling locations and the operations repeated to install the remaining pilings. The same crane will be used to install the smaller abutment piles located on the banks of Oyster Bay Slough on either end of the bridge alignment. After the bridge pilings

are installed, a reinforced concrete pile cap and bridge seat will be constructed. The prefabricated pieces of the bridge will be delivered to the site by barge and lifted into place with the crane. The prefabricated bridge trusses will come with steel decking that provides the formwork for the concrete deck. After the trusses are in place, lightweight concrete will be poured in the steel decking and finished in place.

Trestle Construction Option

Under the trestle construction option, a temporary 20-foot wide and 250-foot long trestle would be constructed parallel to the bridge alignment on the east side. The temporary trestle would be constructed by driving 16-inch hollow steel piles into the mudflat slough substrate and welding steel beams on top of the piles. Untreated timber blocks would then be placed on top of the steel beams to provide a working surface for the construction equipment. The trestle would be dismantled after bridge construction activities were complete.

A preliminary engineering report (AGS 2002) indicates that the trestle could be constructed with 16-inch open ended steel pipe piles spaced approximately 15 to 20 feet apart. The piles would support a 16-inch wide flange beam framing to support 12-inch by 12-inch untreated timber lagging. Open ended piles are recommended as they cause the least amount of disturbance to the soil and can be easily vibrated out while dismantling the trestle (AGS 2002). It is estimated that six steel piles would be required at each support of the trestle and the support could span 20 feet. A total of approximately 13 supports would be required, thus approximately 78 steel piles would be driven into the slough bottom (Chen 2005). The contractor would extract the piles and remove the trestle after the bridge had been constructed.

Under the trestle construction option, the CISS pile segments would be transported to the Project site via truck, and would be driven into place by a crane parked on the temporary trestle. The truss segments of the bridge would also be trucked to the site. The truss segments would then be lifted into place using the crane on the trestle. Access for large construction equipment may be limited on the north bank of Oyster Bay Slough due to the narrow access road and small radius curves of the existing access road from the city of San Leandro Water Pollution Control Plant.

Levee-Top Bay Trail

The project also proposes to complete a 630-foot gap in the Bay Trail by widening a portion of the levee surrounding the City of San Leandro former wastewater treatment pond and constructing a new levee-top trail. The new trail has been designed to comply with applicable trail standards and to allow the continued use of the levee by City of San Leandro maintenance vehicles. The City maintains the former wastewater treatment pond adjacent to the levee and

plans to use it as a storm flow equalization basin in the future. Trucks with City staff routinely conduct visual inspections of the former wastewater ponds.

To accommodate this connecting trail, the existing access road along the levee will be widened by means of a soldier pile and lagging retaining structure and the placement of four feet of lightweight fill (Sheets 14, 15, Appendix A), (Mark Thomas & Co., 2004a). The new twelve-foot wide trail with two-foot shoulders will be located adjacent to, and will be fenced off from, the existing City maintenance road. The proposed trail segment will connect with the existing Bay Trail adjacent to the Galbraith Golf Course to the northeast.

Levee-Top Bay Trail Construction Alternatives

Five alternatives related to the construction of the levee-top trail were originally proposed (Table 1). Four of the alternatives related to construction of the levee-top trail have been withdrawn, leaving one preferred alternative. A discussion of impacts of the preferred alternative for the levee-top trail construction portion of the project will be presented in the following sections, along with the reasoning for withdrawing the alternatives presented in Table 1.

Table 1. Summary of Levee-Top Bay Trail Construction Alternatives

Alternative	Description	Status
Trail #1 – Retaining Structure Alternative (Port of Oakland side)	**Widen top of levee on Port of Oakland side**	**Preferred Alternative**
Trail #2 – Mixed Use Trail/Road Alternative	Use existing levee road for trail and maintenance vehicles	Alternative withdrawn
Trail #3 – Sheetpile Alternative (City side)	Widen top of levee on city of San Leandro sedimentation pond side	Alternative withdrawn
Trail #4 – Levee Fill Alternative	Widen top of levee on Port of Oakland side with 2:1 slope down to existing toe of levee	Alternative withdrawn
Trail #5 – Alternative Alignment	Construct trail around gun club, with no bridge	Alternative withdrawn

<u>Trail #1 – Retaining Structure (Port of Oakland side)</u>

The preferred alternative for the levee-top trail construction is Alternative #1 – Retaining Structure (Port of Oakland side). Under this alternative, a retaining wall and fill will be used to widen the top of the existing levee in order to accommodate both the existing City of San Leandro access road and the new segment of levee-top Bay Trail. The retaining wall would be placed on the Port of Oakland (north) side of the existing levee (Figure 3).

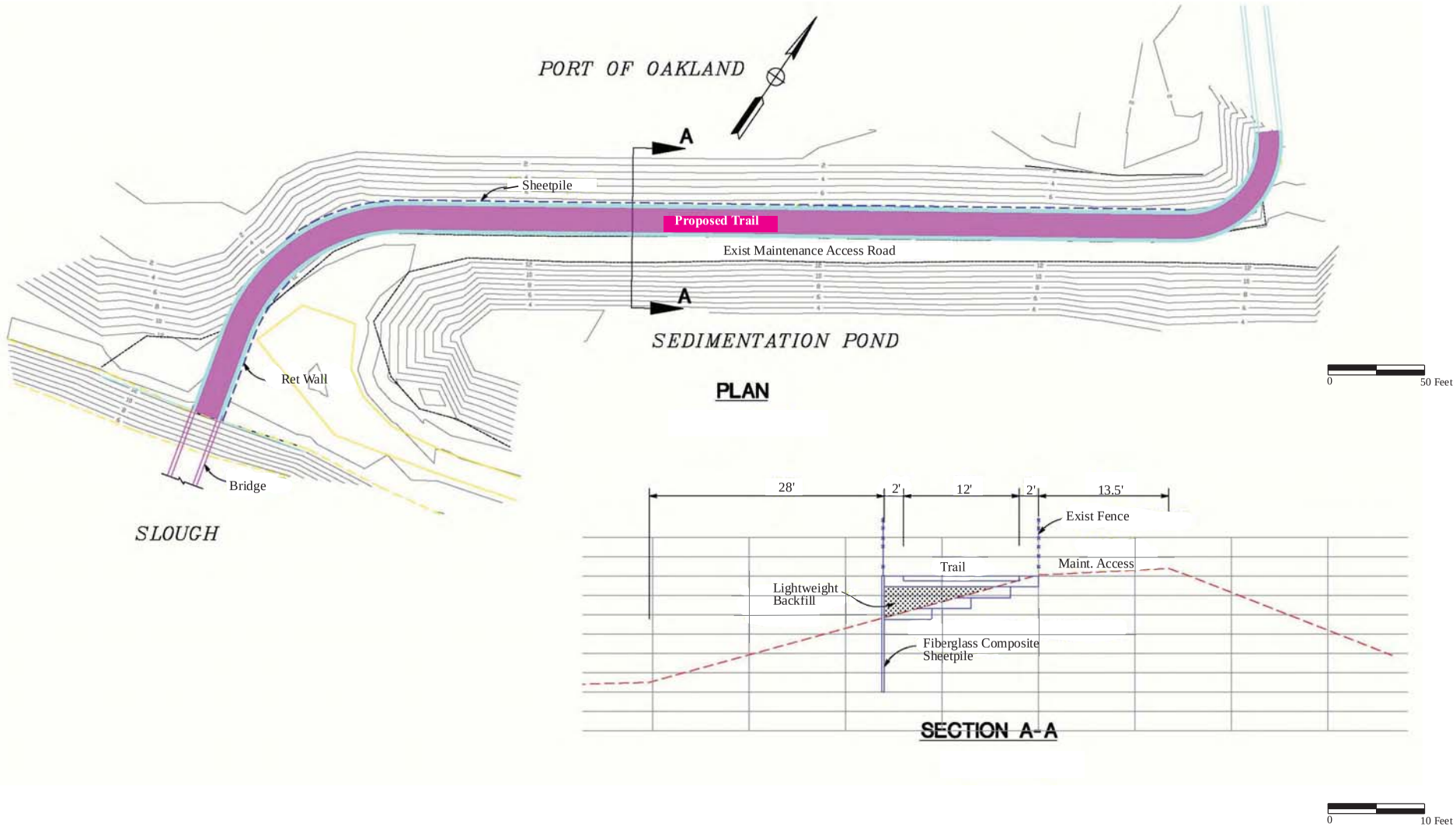
The retaining wall will consist of 24-inch cast-in-drilled-hole (CIDH) steel soldier piles with a treated timber lagging wall of 4-inch by 12-inch Douglas fir or redwood placed horizontally. The piers will be driven between six and 20 feet deep from the top of the levee, lagging installed, and then four feet of lightweight fill placed on the existing slope to widen the top of the levee and create the trail surface. The retaining structure and fill will be placed outside the salt marsh wetland area, which begins at the toe of the levee. New fencing will be installed to separate the existing levee maintenance road from the new trail. The trail will be constructed as a twelve-foot trail with two-foot shoulders, which meets San Francisco Bay Trail standards.

Alternatives Considered and Withdrawn

Four alternatives related to the trail connection have been considered and withdrawn (Table 1). The reason for withdrawal of each alternative is discussed below.

Trail Alternative #2

Under Trail Alternative #2 – Mixed Use Trail/Road Alternative, City maintenance trucks and pedestrians/bicyclists would have shared an 11.5-foot wide trail with one-foot wide shoulders. A removable or fold-down railing would have been installed to prohibit public access to the former



Source: Mark Thomas & Company, 2004.

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wastewater treatment pond. Two electric gates would have separated the trail from the remainder of the maintenance road that encircles the pond. This alternative was withdrawn because it would have required the trail traffic to co-mingle with the City wastewater treatment plant maintenance activities at the former treatment pond, and additional effort would have been required to remove the railing to maintain the pond.

Trail Alternative #3

Under Trail Alternative #3 – Sheetpile (City side), the trail would have been constructed on the city of San Leandro former wastewater treatment pond (south) side of the levee. Sheetpile would be driven approximately 24 feet deep into the slope of the levee adjacent to the sedimentation pond. Three feet of lightweight fill would be placed on top of the slope to create room for the maintenance roads. Unlike the preferred alternative, the maintenance road would be only ten feet wide and the trail

would also be ten feet wide with one-foot shoulders. The narrower road and trail are the result of the steeper 3:1 levee slope on the treatment pond side of the levee as opposed to the 3.6:1 slope on the Port side of the levee. A fence would separate the road and trail and a removable or fold-down railing would be installed on the sheetpile wall to prevent accidental falls into the sediment pond.

Alternative #3 was withdrawn because: 1) the road and trail would be narrow; 2) the maintenance road would have an offset where the trail meets the road; and 3) the three-foot vertical sheetpile wall would hinder maintenance work and reduce the capacity of the sediment pond.

Trail Alternative #4

Trail Alternative #4 – Levee Fill involved the placement of fill on the Port of Oakland side of the levee slope anchored by a 2:1 slope down to the existing toe of the levee. This alternative would accommodate a 12-foot wide trail with a two-foot shoulder and a separate maintenance road. However, this alternative was withdrawn because adding the fill on top of the soft Bay mud of the levee could cause failure of the new trail as well as the existing levee, and because construction would require intrusion into the adjacent wetlands.

Trail Alternative #5

Trail Alternative #5 – Alternative Alignment, considered a trail alignment around the east end of Oyster Bay Slough that would connect with the existing trail on the Port of Oakland property to the existing trail on the Oyster Bay Regional Shoreline without using a bridge over the

embayment. The trail would be aligned around the existing gun club and through the City's wastewater treatment plant facility. No other alternate inland routes for the trail would be possible. This alternative was rejected because of safety concerns related to the gun range and wastewater treatment plant.

Construction Schedule, Equipment, Staging Area, and Employees

Estimated time for construction of the bridge and trail segment is approximately 120 days (16 weeks or four months). Key activities will include pile-driving of the CISS piles for the bridge (six weeks); construction of the bridge (four weeks); and construction of the steel soldier pile wall for the trail (12 weeks) (Chen, 2005).

The heavy equipment that will be required includes two cranes and two generators used during the entire construction period; one pile driver, used for approximately eight weeks; and a drill machine, paving machine, and two rollers used for a shorter period of time. In addition, approximately 60 concrete truckloads will be needed for concrete placement at the two bridge abutments, for pier caps, and to pour the concrete bridge deck and CISS piles. Another 200 truckloads will be used for excavation and to deliver materials. An estimated 200 cubic yards of soil from excavation and drilling operations will be generated, trucked, and disposed of off-site (Chen, 2005).

Three construction staging areas are proposed (Figure 2). Heavy equipment will access the southern portion of the construction site via Davis Street and the existing paved trail in the regional park. A staging area has been identified at a wide flat section adjacent to the park trail. The two other staging areas are located in an existing equipment parking area west of the City's wastewater treatment plant and at another semi-paved area near an existing building at the north end of the levee maintenance road.

The number of construction workers on the site will average between five and 20 workers each day, depending on the demand of the work (Chen, 2005).

Standard Construction Best Management Practices

The applicant will be required to adhere to a Storm Water Pollution Prevention Plan (SWPPP) that will be completed prior to the commencement of construction activities. Standard Best Management Practices (BMPs) will be implemented to minimize erosion and sedimentation during construction activities. Specific BMPs include the following:

- Measures will be taken to prevent construction material and debris from entering Oyster Bay Slough.

- Contractors will be informed about the importance of sensitive habitat adjacent to the Project Area. In addition, the limits of equipment staging will be identified.
- Materials and wastes will be contained: construction, building, and waste materials will be stored in designated areas, protected from rainfall and contact with stormwater runoff. All construction waste will be disposed of in designated areas, and stormwater will be prevented from flowing on to or off of these areas.
- Waste material will be disposed of at a landfill.
- To minimize construction-related dust, if necessary, all active construction areas will be watered at least twice daily.
- All paved access roads, parking areas, and staging areas will be swept daily.
- Exhaust systems and emission control devices on all construction machinery will be maintained in good operating condition.
- Refueling and maintenance of equipment will be undertaken off-site.
- Soil stockpiles will be covered and surrounded by berms or gravel bags and will not be located within 50 feet of a slope or sensitive habitat.
- All soil erosion and sediment control measures (e.g. silt fencing, straw mulch) will be kept in place until construction is complete.
- Periodic bridge maintenance activities (e.g. painting) will not interfere with or impact water quality in Oyster Bay Slough.

1.3. Summary of Consultation to Date

No consultation with USFWS or CDFG has been conducted to date.

1.4. Document Preparation History

This Biological Assessment was prepared by Phil Greer and Morgan Trieger of WRA in March and April 2008. Portions of this BA were initially prepared for the Project Initial Study/Mitigated Negative Declaration (BASELINE 2007), wetland delineation report (WRA 2008a), and Caltrans Natural Environment Study (WRA 2008b).

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Chapter 2. Study Methods

2.1. Listed and Proposed Species Potentially in the Biological Study Area

Federal endangered, threatened and candidate species known to occur in Alameda County, California, and in the San Leandro and eight surrounding USGS 7.5 minute quadrangle maps are listed below in Table 2. List compiled from USFWS species lists (USFWS 2008), California Natural Diversity Database (CNDDB) records (CNDDB 2008), and California Native Plant Society (CNPS) electronic inventory records (CNPS 2008).

Table 2: Listed, Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Invertebrates					
Longhorn fairy shrimp	*Branchinecta longiantenna*	**FE**	Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay-grass-bottomed pools in shallow swales.	A	No Effect. Project Area lacks suitable habitat for this species.
Vernal pool fairy shrimp	*Branchinecta lynchi*	**FT**	Inhabit small, clear-water sandstone-depression pools, grassy swales, slumps, or basalt-flow depression pools.	A	No Effect. Project Area lacks suitable habitat for this species.
Bay checkerspot butterfly	*Euphydryas editha bayensis*	**FT**	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant.	A	No Effect. Project Area lacks suitable habitat and larval host plants.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Mission blue butterfly	*Icaricia icarioides missionensis*	**FE**	Inhabits grasslands of the San Francisco peninsula. Three larval host plants: *Lupinus albifrons, L. variicolor*, and *L. formosus*, of which *L. albifrons* is favored.	A	No Effect. Project Area lacks suitable habitat and larval host plants.
San Bruno elfin butterfly	*Incisalia mossii bayensis*	**FE**	Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tried to the distribution of the larval host plant, *Sedum spathulifolium*.	A	No Effect. Project Area is out of species range and lacks suitable habitat and larval host plants.
Vernal pool tadpole shrimp	*Lepidurus packardi*	**FE**	Inhabit pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	A	No Effect. Project Area lacks suitable habitat for this species.
Callippe silverspot butterfly	*Speyeria callippe callippe*	**FE**	Restricted to the northern coastal scrub of the San Francisco peninsula. Host plant is *Viola pedunculata*.	A	No Effect. Project Area is out of species range and lacks larval foodplant and suitable habitat.
Myrtle's silverspot butterfly	*Speyeria zerene myrtleae*	**FE**	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County. Larval foodplant thought to be *Viola adunca*.	A	No Effect. Project Area is out of species range and lacks larval foodplant and suitable habitat.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Fish					
Green sturgeon	*Acipenser medirostris*	**FT**	Spawn in the Sacramento River and the Klamath River. Spawn at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	A	No Effect. Oyster Bay Slough provides poor foraging habitat as the shallow channel completely drains at low tide. No freshwater habitat is present for juveniles.
Tidewater goby	*Eucyclogobius newberryi*	**FE**	Found in the brackish waters of coastal lagoons, marshes, creeks, and estuaries. Unique among fishes of the Pacific coast, gobies are restricted to waters of low salinity in coastal wetlands. They feed along the bottom, preferring clean, shallow, slow-moving waters.	A	No Effect. No suitable brackish water aquatic habitat is present in the Project Area. Oyster Bay Slough is fully saline.
Delta smelt	*Hypomesus transpacificus*	**FT**	Live in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet.	A	No Effect. No suitable brackish water aquatic habitat is present in the Project Area. Oyster Bay Slough is fully saline.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Central California Coast Coho salmon	*Oncorhynchus kisutch*	**FE**	The Federal listing is limited to naturally spawning populations in streams between Punta Gorda, Humboldt County and the San Lorenzo River, Santa Cruz County. Spawn in coastal streams at temps. from 4-14C. Prefer beds of loose, silt-free, coarse gravel and cover nearby for adults	A	No Effect. Spawning habitat is not present in Oyster Bay Slough. Coho are rare in Bay tributaries, adults and juveniles are unlikely to stray into channel during outmigrant movements.
Central California Coastal steelhead	*Oncorhynchus mykiss*	**FT**	Federal listing includes all runs from the Russian River, south to Soquel Creek, inclusive. Includes the San Francisco and San Pablo Bay basins but excludes the Sacramento-San Joaquin River basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean	HP	**Not Likely to Adversely Affect.** Spawning habitat is not present in Oyster Bay Slough, but Juveniles may stray into channel during high tides during outmigrant movements.
Central Valley steelhead	*Oncorhynchus mykiss*	**FT**	The Central Valley ESU includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries.	A	No Effect. Spawning habitat is not present in Oyster Bay Slough. Species is rare in Bay tributaries, adults and juveniles are unlikely to stray into channel during outmigrant movements.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Central Valley spring-run Chinook salmon	*Oncorhynchus tshawytscha*	**FT**	Federal listing includes populations spawning in the Sacramento River & its tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated rivers and streams.	A	No Effect. Spawning habitat not present in Oyster Bay Slough. Spring-run Chinook are not known to enter this area, and their rarity makes occurrence in the project area unlikely.
Winter-run Chinook salmon, Sacramento River	*Oncorhynchus tshawytscha*	**FE**	Prior to the construction of Shasta Dam, likely spawned in the headwaters of the Sacramento, in streams fed mainly by the flow of constant-temperature springs. Currently spawn in the mainstem of the Sacramento from Redding downstream to Tehama. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams.	A	No Effect. Spawning habitat is not present in Oyster Bay Slough. Species is rare in Bay tributaries, adults and juveniles are unlikely to stray into channel during outmigrant movements.
Central Valley fall/late fall-run Chinook salmon	*Oncorhynchus tshawytscha*	**FC**	Populations spawning in the Sacramento & San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams.	HP	**Not Likely to Adversely Affect.** Spawning habitat not present in Oyster Bay Slough; juveniles may stray into channel during high tides during outmigrant movements.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Reptiles					
Loggerhead turtle	*Caretta caretta*	**FT**	Loggerheads nest on ocean beaches, generally preferring high energy, relatively narrow, steeply sloped, coarse-grained beaches. Loggerheads are circumglobal, occurring throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. Loggerheads are the most abundant species of sea turtle found in U.S. coastal waters.	A	No Effect. Suitable nesting and foraging habitat for this species is not present in the Project Area.
Green turtle	*Chelonia mydas (*incl. *agassizi)*	**FT**	In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south. Green turtles primarily use three types of habitat: oceanic beaches (for nesting), convergence zones in the open ocean, and benthic feeding grounds in coastal areas. Adult green turtles are almost exclusively herbivores, feeding on sea grasses and algae.	A	No Effect. No suitable nesting or foraging habitat present in the Project Area.
Leatherback turtle	*Dermochelys coriacea*	**FE**	Leatherbacks are commonly known as pelagic animals, but also forage in coastal waters. The U.S. Caribbean, primarily Puerto Rico and the U.S. Virgin Islands, and southeast Florida support minor nesting colonies, but represent the most significant nesting activity within the United States. Adult leatherbacks are capable of tolerating a wide range of water temperatures.	A	No Effect. No suitable nesting or foraging habitat present in the Project Area.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Olive (=Pacific) ridley sea turtle	*Lepidochelys olivacea*	**FT**	The olive ridley is mainly a pelagic sea turtle, but has been known to inhabit coastal areas, including bays and estuaries. Olive ridleys are globally distributed in the tropical regions of the South Atlantic, Pacific, and Indian Oceans. In the Eastern Pacific, they occur from Southern California to Northern Chile.	A	No Effect. No suitable nesting or foraging habitat present in the Project Area.
Alameda whipsnake	*Masticophis lateralis euryxanthus*	**FT**	Prefers south-facing slopes and ravines with rock outcroppings, oak trees and small mammal burrows. Inhabits chaparral and foothill-hardwood habitats in the eastern Bay Area hills.	A	No Effect. Suitable habitat for this species is not present in the Project Area.
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	**FE**	Vicinity of freshwater marshes, ponds and slow moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	A	No Effect. Suitable habitat for this species is not present in the Project Area.
Amphibians					
California tiger salamander	*Ambystoma californiense*	**FT**	Inhabits annual grassland habitats with mammal burrows. Seasonal ponds and vernal pools are crucial to breeding.	A	No Effect. Suitable habitat for this species is not present in the Project Area.
California red-legged frog	*Rana aurora draytonii*	**FT**	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	A	No Effect. Suitable habitat for this species is not present in the Project Area.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Birds					
Marbled Murrelet	*Brachyramphus marmoratus*	**FT**	(Nesting) Feeds near shore; nests inland along the Pacific coast, from Eureka to Oregon border, and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland. Nests often built in Douglas-fir or redwood stands containing platform-like branches.	A	No Effect. No old-growth redwood forests present in the vicinity of the Project Area.
Western Snowy Plover	*Charadrius alexandrinus nivosus*	**FT**	Found on sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	A	No Effect. Suitable habitat for this species is not present in the Project Area.
California Brown Pelican	*Pelecanus occidentalis californicus*	**FE**	Colonial nester on coastal islands of small to moderate size islands just outside the surf line.	A	No Effect. Suitable habitat for this species is not present in the Project Area.
California Clapper Rail	*Rallus longirostris obsoletus*	**FE**	Found in tidal salt marshes of the San Francisco Bay. Requires mudflats for foraging and dense vegetation on higher ground for nesting.	P	**Not Likely to Adversely Affect.** Suitable foraging and breeding habitat is present in the vicinity of the bridge alignment in Oyster Bay Slough

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
California Least Tern	*Sternula antillarum* (=*Sterna, =albifrons*) *browni*	**FE**	Colonial breeder on barren or sparsely vegetated, flat substrates near water. Breeding colonies in San Francisco Bay in abandoned salt ponds and along estuarine shores.	A	No Effect. No suitable nesting habitat for this species is present in the vicinity of the Project Area
Mammals					
Steller (=northern) sea-lion	*Eumetopias jubatus*	**FT**	Breeds on Año Nuevo, San Miguel and Farallon islands, Point Saint George, and Sugarloaf. Hauls-out on islands and rocks. Needs haul-out and breeding sites with unrestricted access to water, near aquatic food supply and with no human disturbance.	A	No Effect. No suitable haul-out or breeding sites for this species present in the vicinity of the Project Area
Salt marsh harvest mouse	*Reithrodontomys raviventris*	**FE**	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Primary habitat is pickleweed-dominated, saline emergent marshes. Requires adjacent, upland areas for escape from high tides. Does not burrow.	HP	**Not Likely to Adversely Affect.** Suitable pickleweed habitat exists in the diked marsh immediately adjacent to the levee-top trail alignment.
Plants					

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
San Mateo thorn-mint	*Acanthomintha duttonii*	**FE**	In relatively open areas in chaparral, valley and foothill grassland, and coastal scrub. Extant populations known only from very uncommon serpentinite vertisol clays. 50-300 m. Blooms April-June.		No Effect. No suitable soil or habitat present in Project Area. Project Area is out of elevation range for species.
large-flowered fiddleneck	*Amsinckia grandiflora*	**FE**	Cismontane woodland, valley and foothill grassland. 275-305 m.	A	No Effect. No suitable habitat present in Project Area. Project Area is out of elevation range for species.
pallid manzanita (=Alameda or Oakland Hills manzanita)	*Arctostaphylos pallida*	**FT**	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub on shale, sandy or gravelly soil. 185-465 m. Blooms December-March.	A	No Effect. No suitable soil or habitat present in Project Area. Project Area is out of elevation range for species.
robust spineflower	*Chorizanthe robusta* var. *robusta*	**FE**	Cismontane woodland, coastal dunes, coastal scrub. Sandy terraces and bluffs, loose or gravelly sand. 3-300 m. Blooms April-September.		No Effect. No suitable soil or habitat present in Project Area.
fountain thistle	*Cirsium fontinale var. fontinale*	**FE**	Serpentine seeps and grassland in chaparral. 90-180 m. Blooms June-October.	A	No Effect. No suitable soil or habitat present in Project Area. Project Area is out of elevation range for species.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Presidio clarkia	*Clarkia franciscana*	**FE**	Serpentine outcrops in coastal scrub, valley and foothill grassland. 20-335 m. Blooms May-July.	A	No Effect. No suitable soil or habitat present in Project Area. Project Area is out of elevation range for species.
palmate-bracted bird's-beak	*Cordylanthus palmatus*	**FE**	Chenopod scrub, valley and foothill grassland, meadow and seep, and wetlands. Usually on Pescadero silty-clay. 5-155m.	A	No Effect. No suitable soil or habitat present in Project Area.
San Mateo wooly sunflower	*Eriophyllum latilobum*	**FE**	Cismontane woodland, often on road cuts. Found on and off serpentine soils. 45-150 m. Blooms May-June.	A	No Effect. No suitable soil or habitat present in Project Area. Project Area is out of elevation range for species.
Marin dwarf-flax (=western flax)	*Hesperolinon congestum*	**FT**	In serpentine barrens in chaparral and serpentine grassland. 5-370 m. Blooms April-July.	A	No Effect. No suitable soil or habitat present in Project Area.
Santa Cruz tarplant	*Holocarpha macradenia*	**FT**	Coastal prairie, coastal scrub, valley and foothill grassland. Usually on sandy or clay soils. 10-260 m. Blooms June-October.		No Effect. No suitable soil or habitat present in Project Area. Project Area is out of elevation range for species.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Effect Determination
Contra Costa goldfields	*Lasthenia conjugens*	**FE**	Cismontane woodland, playas, valley and foothill grassland, mesic vernal pools. 0-470 m. Blooms March-June.	A	No Effect. No suitable soil or habitat present in Project Area.
beach Layia	*Layia carnosa*	**FE**	On sparsely vegetated semi-stabilized dunes, usually behind foredunes. 0-75 m. Blooms March-July.	A	No Effect. No suitable soil or habitat present in Project Area.
white-rayed pentachaeta	*Pentachaeta bellidiflora*	**FE**	Open dry rocky slopes and grassy areas on soil from serpentine bedrock in valley and foothill grassland. 35-620 m. Blooms March-May.	A	No Effect. No suitable soil or habitat present in Project Area. Project Area is out of elevation range for species.
California seablight	*Suaeda californica*	**FE**	Margins of coastal salt marshes. 0-5 m. Blooms July-October.	A	No Effect. Margins of salt marsh in Project Area highly disturbed and composed of concrete riprap and other fill materials and non-native soils.

Absent [A] - No habitat present and no further work needed.
Habitat Present [HP] - Habitat is, or may be present. The species may be present.
Present [P] - Species is present
Critical Habitat [CH] - Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.
Status: -Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS), etc.

The analysis included herein concludes that the Project may affect salt marsh harvest mouse, California Clapper Rail, Central California coastal steelhead, and Central Valley fall/late fall-run Chinook salmon. The avoidance and minimization efforts proposed by the applicant are sufficient to offset any effect the proposed action may have upon these species.

2.2. Studies Required

Prior to the site visit, the Soil Survey of Alameda County, California [U.S. Department of Agriculture (USDA) 1975] was examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Project Area. A wetland delineation (WRA 2008a) and Biological Resources Assessment (WRA 2004) previously completed for the Project were also reviewed. Biological communities present in the Project Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986).

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFG were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the U.S. Fish and Wildlife Service List of Plant Species that Occur in Wetlands (Reed 1988). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual (Environmental Laboratory 1987) and Field Indicators of Hydric Soils in the United States (NRCS 2002).

Potential occurrence of special status species in the Project Area was evaluated by first determining which special status species occur in the vicinity of the Project Area through a literature and database search. Database searches for known occurrences of special status species focused on the San Leandro 7.5-minute USGS quadrangle and the surrounding eight USGS quadrangles (Hayward, Hunter's Point, Las Trampas Ridge, Newark, Oakland East,

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

Oakland West, Redwood Point, San Mateo). The following sources were reviewed to determine which special status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

- USFWS Quadrangle Species Lists (USFWS 2008)
- USFWS County Species List for Alameda County (USFWS 2008)
- California Natural Diversity Database records (CNDDB) (CDFG 2008)
- CNPS Electronic Inventory records (CNPS 2008)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner *et al*. 1990)
- WRA Biological Resources Assessment for the Oyster Bay Bridge at Oyster Bay Slough Project Site, San Leandro, Alameda County, California (WRA 2004, 2007)
- Caltrans Natural Environment Study for the Oyster Bay Bridge at Oyster Bay Slough Project Site, San Leandro, Alameda County, California (WRA 2008b)

The wetland delineation was conducted according the standard Army Corps of Engineers guidance (Environmental Laboratory 1987) to determine the presence of potential wetlands and other waters in the Project Area subject to federal jurisdiction under Section 404 of the Clean Water Act.

2.3. Personnel and Survey Dates

April 27, 2004. Jeff Dreier, Senior Wildlife Biologist, WRA, conducted a wildlife survey of the Project Area. He traversed the area on foot to evaluate the likelihood of presence of federally-listed wildlife species and suitability of potential habitat.

April 29, 2004. Philip Greer, Senior Plant Ecologist, WRA, and Crystal Acker, Associate Biologist, WRA, traversed the Project Area on foot to evaluate (1) presence of plant communities within the Project Area, (2) presence of sensitive habitats, and (3) suitability of existing conditions for any special status plant or wildlife species habitat.

August 15, 2007. Philip Greer, Amy Langston, Senior Biological Technician, WRA, and Morgan Trieger, Biological Technician, WRA, traversed the Project Area on foot to evaluate whether site conditions had changed substantially since the assessment performed on April 29, 2004. They traversed the Project Area on foot to evaluate (1) presence of plant communities within the Project Area, (2) presence of sensitive habitats, and (3) suitability of existing conditions for any special status plant or wildlife species habitat.

January 8, 2008. WRA biologist Morgan Trieger conducted a routine wetland delineation to determine the presence of potential wetlands and other waters subject to federal jurisdiction under Section 404 of the Clean Water Act within the Oyster Bay Bridge Project Area footprint.

2.4. Agency Coordination and Professional Contacts

The following agencies were invited to comment on the Notice of Preparation of a Draft Environmental Assessment for the project, released by the East Bay Regional Park District on 13 May 2004. The same agencies were also invited to attend a public Scoping Session that was held on 25 May 2004.

- Regulatory Branch, U.S. Army Corps of Engineers, San Francisco
- Coast Bay Delta Branch, U.S. Fish and Wildlife Service, Sacramento
- National Marine Fisheries Service, Seattle
- California Department of Fish and Game, Region 3, Yountville
- San Francisco Bay Regional Water Quality Control, Oakland
- Bay Conservation and Development Commission, San Francisco
- Port of Oakland

Letters were received from the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service. The letters are included in Appendix D.

The same agencies were sent a copy and invited to comment on the Initial Study/Mitigated Negative Declaration for the project (BASELINE 2007). Letters were received from CDFG, Port of Oakland and BCDC regarding the IS/MND and are also included in Appendix D.

2.5. Limitations That May Influence Results

A biological assessment provides general information on the potential presence of sensitive species and habitats. The biological assessment is not an official protocol-level survey for listed species that may be required for project approval by local, state, or federal agencies. However, specific findings on the occurrence of any species or the presence of sensitive habitats may require that protocol surveys be conducted. This assessment is primarily based on information available at the time of the study and onsite conditions that were observed on the date of the site visit. No limitations that may influence the results of this document were encountered.

Chapter 3. Results: Environmental Setting

Oyster Bay Slough is a shallow, 350-foot wide remnant embayment that was created when the historic Bay was filled to the south by the creation of a landfill and to the north by construction of the Oakland Airport and the City of San Leandro wastewater treatment facility. The areas adjacent to the proposed Project site on the north side of the slough include lands owned by the City of San Leandro, which consist of levee-top gravel roads and a former wastewater treatment pond and Oakland Airport property, which contains a seasonal, non-tidal brackish marsh dominated by dense pickleweed cover. The airport marshland is likely a remnant of the historic bay or an historic tidal marsh. Oyster Bay Regional Shoreline and an active landfill facility are adjacent to the Study Area to the south. Oyster Bay Slough opens to South-Central San Francisco Bay to the west.

3.1. Description of Existing Biological and Physical Conditions

Description of Physical Conditions

Site elevations range from approximately 5 to 20 feet NAVD. The mudflats appear to be at an elevation between mean tide level and mean high water. The slough drains to a single, shallow, central drainage channel approximately three to five feet wide at low tides. The principal natural hydrological source for the Project Area is periodic tidal inundation within Oyster Bay Slough, and direct precipitation for the adjacent levee uplands and non-tidal brackish marsh.

With the exception of mudflat sediments, all soils within the Project Area are composed of imported fill materials; no native soils are present on levee banks or created uplands. The Alameda County Soil Survey (USDA 1975) indicates that the Project Area has two mapped soil types: 156-Xeropsamments, fill and 146-Urban land. Xeropsamments are described as being composed of sandy fill material dredged from old beach areas; these soils are mapped on the north side of the slough channel. Urban land is described as being composed of heterogeneous fill covered by buildings, roads, parking lots and other urban structures; these soils are mapped on the south side of the slough channel.

Description of Biological Conditions

Plant communities within the Project Area are dominated by coastal salt marsh (middle and low), non-native annual grassland, coyote brush scrub, and ruderal habitat. Large portions of the Project Area were unvegetated, either naturally (mudflat) or due to development (riprap and

gravel surfaces). Coastal salt marsh communities are considered Environmentally Sensitive Areas (ESAs).

Northern Coastal Salt Marsh

Vegetation on intertidal mudflat at elevations between approximately mean tide level (MTL) and mean high water (MHW) in the Project Area is composed of cordgrass (Spartina spp.) which based on its height is likely the invasive non-native smooth cordgrass (*Spartina alterniflora*) or hybrids with the native California cordgrass (*Spartina foliosa*). The smooth cordgrass occurs within a 10-15 foot wide band between the north levee bank and channel mudflat and in one discrete patch along the south levee bank. No other species were present within smooth cordgrass areas. This non-native vegetation can be classified as the cordgrass series following Sawyer and Keeler-Wolf (1995).

Within the Project Area, individual pickleweed plants have colonized spaces between riprap on the levee banks up to approximately high tide elevation. Some non-native smooth cordgrass was also present within the middle marsh area, and a few upland herbs and grasses were also observed growing in the riprap amid pickleweed. Due to the lack of native soils and scattered distribution of plants, the pickleweed areas present on-site do not appear to be functioning as a "plant community", and supply little to no habitat value. This vegetation can be classified as the pickleweed series following Sawyer and Keeler-Wolf (1995).

Non-native Annual Grassland

The non-native annual grassland series occurs in uplands in all topographic locations within the Study Area. Annual grasses and herbs are dominant in the ground layer, including brome grasses (*Bromus* spp.), wild oats (*Avena* spp.), ryegrasses (*Lolium* spp.), California poppy (*Eschscholzia californica*), filarees (*Erodium* spp.), goldfields (*Lasthenia* spp.), lupines (*Lupinus* spp.), mustards (*Brassica* spp.), owl's-clovers (*Castilleja* spp.), and/or star-thistles (*Centaurea* spp.). Shrubs and trees may also be present. Within the Project Area, upland areas were vegetated by rip-gut brome, slender wild oats, fennel, black mustard, wild radish, and Italian thistle. The dominant shrub along the top of the levees was coyote brush. Patches of pampas grass were also present throughout upland areas, and a swath of iceplant existed on the lower levee bank between the grassland vegetation and the adjacent, off-site pickleweed marshland.

Coyote Brush Scrub

Within the Project Area, coyote brush was the only shrub growing with the non-native, annual grassland understory described above. The coyote brush scrub series occurs in a variety of upland habitats, including stabilized dunes of coastal bars and river mouths, spits along the coastline, coastal bluffs, open slopes, and terraces. Coyote brush is the sole or dominant shrub; the ground layer is variable.

Ruderal Habitat

Areas of ruderal habitat intermingled with the non-native annual grassland habitat are also present. These areas have been disturbed by levee and other construction activities and deposition of fill materials. Dominant ruderal vegetation includes Italian thistle (*Carduus pycnocephalus*), bristly ox-tongue (*Picris echioides*), broadleaved pepperweed (*Lepidium latifolium*), and wild mustard (*Hirschfeldia incana*). Ornamental landscape shrubs are also present along an existing City of San Leandro levee-top access road.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Federal-Listed/Proposed Plant Species

4.1.1. Discussion of Plant Species

No federal-listed plant species were observed within the Project Area during the site visit and there are no records of federal-listed plant species occurring within the Project Area. No further protocol-level surveys for special status plant species are necessary.

4.1.1.1. SURVEY RESULTS

Based on a review of the CNDDB (CDFG 2008) and CNPS electronic inventory records (CNPS 2008), 12 federal-listed special status plant species have been documented to occur in the vicinity of the Project Area. These species typically inhabit habitat types including valley and foothill grasslands, cismontane woodland, alkaline grasslands, inland and coastal dunes, serpentine grasslands, chaparral, freshwater wetlands, and marshes. During the biological site assessment, it was determined that the Project Area lacks the specific habitat requirements of these 12 species.

In addition, no native soils or seedbanks are present due to past disturbance and import of fill materials during the construction of the adjacent wastewater treatment facility, Oakland International Airport, and EBRPD facilities. The vegetation and soils present in the Project Area are typical of highly disturbed areas.

4.1.1.2. CRITICAL HABITAT

The Project Area is not located within any proposed or existing critical habitat for any federal-listed plant species.

4.1.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Federal-listed plant species are not expected to occur within the Project Area. No avoidance or minimization efforts are recommended.

4.1.1.4. PROJECT IMPACTS

Project impacts are primarily confined to the levee top and adjacent levee shoulder within the Bay Trail footprint. The levee-top road consists of compacted dirt and gravel. Adjacent plant communities include ornamental shrubs and non-native grassland containing few, isolated native shrubs including toyon and coyote brush. Federal-listed plant species are not expected to occur within the Project Area. Therefore impacts to federal-listed plant species are not anticipated.

4.1.1.5. CUMULATIVE EFFECTS (FESA)

There are no reasonably foreseeable, non-federal actions that would potentially impact the Project Area.

4.2. Federal-Listed or Proposed Animal Species Occurrences

Based upon a review of the resources and databases given in Table 2, 32 federal-listed special status wildlife species have been documented to occur in the vicinity of the Project Area or have the potential to occur within the vicinity of the Project Area. Based on the analysis presented in this Biological Assessment, the Project may affect, but will not likely adversely affect the salt marsh harvest mouse, California Clapper Rail, Central California coastal steelhead, and Central Valley fall/late fall-run Chinook salmon. Detailed species accounts, survey results, and species-specific Project information is given for each species in the following sections. No other federal listed or proposed species are considered to have a moderate or high likelihood of occurring within the Project Area.

4.2.1. Salt Marsh Harvest Mouse

Salt marsh harvest mouse is found only in saline emergent wetlands where suitable dense upland cover is present (Fisler 1965). Their preferred habitat is pickleweed (*Salicornia virginica*) and they require at least 60 percent cover pickleweed, with a cover depth of 30 to 50 cm (USFWS 1984). However, diverse brackish marshes composed of various halophytes including rushes, cattails, alkali heath, and pickleweed are known to support salt marsh harvest mouse (USFWS 1984). Zetterquist (1977) determined that salt marsh harvest mouse will utilize cattail-tule dominated marshes, despite this habitat being considered sub-optimal. Diked marshes are not favored due to elimination of upland cover; however harvest mice appear to have adapted to marginal diked habitats in saline areas, where pickleweed is present (Shellhammer et al, 1982, Geissel, W., 1988). The Project Area is located within current salt marsh harvest mouse range, and the nearest documented occurrence is at Arrowhead Marsh, approximately 2.5 miles north of the Project Area (CNDDB 2008).

The primary food source for salt marsh harvest mouse is seed and pickleweed. They are also accustomed to drinking moderately saline water and are capable of swimming to dispersal habitats. This species uses adjacent upland vegetation including grasslands and shrubs for cover and typically nests in a loose ball of grasses on the surface of the ground. The species does not burrow.

4.2.1.1. SURVEY RESULTS

No surveys have been performed in the Project Area for salt marsh harvest mouse. The nearest documented occurrence is at Arrowhead Marsh, approximately 2.5 miles north of the Project Area (CNDDB 2008). Suitable habitat for salt marsh harvest mouse exists directly adjacent to the Project Area on Port of Oakland property, where dense pickleweed cover exists within a diked area of former tidal salt marsh. Because of the proximity of the nearest documented occurrence and the suitability of the pickleweed habitat located directly adjacent to the Project Area, the presence of salt marsh harvest mouse is assumed within the Project Area.

4.2.1.2. CRITICAL HABITAT

No critical habitat for salt marsh harvest mouse is currently designated.

4.2.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Presence of salt marsh harvest mouse is assumed throughout the impounded pickleweed marsh adjacent to the levee-top Bay Trail alignment. All impacts to salt marsh harvest mouse within the levee-top Bay Trail footprint will be avoided with the implementation of the following avoidance and minimization measures:

- A pre-construction survey for salt marsh harvest mouse presence within brush within the levee-top trail footprint will be conducted immediately before brush clearing takes place. If salt marsh harvest mice are encountered during the survey, brush clearing activities will not commence until USFWS has been consulted.

- All brush clearing within the levee-top trail alignment and on the levee slope will be conducted by hand in order to give mice a chance to disperse into dense pickleweed cover adjacent to levee slope.

- Once the brush has been cleared, temporary exclusion fencing will be erected on the levee slope to prevent salt marsh harvest mice from dispersing into the construction area. Fence material will consist of heavy plastic sheeting (as it is more difficult for rodents to climb) and fence height will be at least 12 inches higher than the highest adjacent vegetation with a maximum height of four feet. The fence bottom will be attached to the ground with landscape staples. Care will be given to insure no gaps will occur either

under the sheeting or at seams. Stakes will be located on the inside of the exclusion fence to deter mice from climbing stakes into the work area and facilitate mice exiting the work area. The exclusion fence will be inspected at the beginning of each work day to ensure its integrity.

- In addition to the fencing described above, a personnel exclusion fence will be erected adjacent to the salt marsh harvest mouse exclusion fence to prevent construction personnel from entering pickleweed habitat.

- No avoidance or minimization efforts are proposed at the sites of the bridge abutments where pickleweed habitat is sparse or not present.

4.2.1.4. PROJECT EFFECTS

With the implementation of the Avoidance and Minimization Efforts listed above, the proposed project is not likely to adversely affect the salt marsh harvest mouse. Potential direct impacts to salt marsh harvest mouse could occur during construction activities, particularly during brush removal and construction activities related to the levee-top portion of Bay Trail. Suitable pickleweed habitat is located on the Port of Oakland property adjacent to the trail alignment within the Project Area. Direct impacts could include mortality of individuals, disruption of reproduction, loss of foraging or upland escape habitat, water quality impairment from siltation, or disturbance due to noise or light during construction. Mice could also be directly impacted during levee-top brush removal within the Bay Trail footprint. Additionally, mice could be directly impacted by backfilling activities on the levee slope above suitable pickleweed habitat. No direct impacts to salt marsh harvest mouse would occur during construction activities related to either construction option of the Oyster Bay Bridge due to lack of suitable pickleweed or upland habitat in the vicinity of the bridge footprint.

Potential indirect impacts to salt marsh harvest mouse could occur due to the increased post-construction public access to the Project Area. Because the Project includes construction of a new segment of Bay Trail, increased usage by pedestrians and bicyclists is expected within the Project Area. Although a fence will be constructed to discourage pedestrian access into suitable salt marsh harvest mouse pickleweed and upland escape habitat, illegal trespassing by pedestrians could increase the chances of mice being crushed by foot traffic. Additionally, levee-top widening activities will reduce the amount of upland escape and nesting habitat for salt marsh harvest mouse.

4.2.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Direct and indirect impacts to salt marsh harvest mouse will be avoided by following the avoidance and minimization efforts listed in Section 4.2.1.3. Therefore, no modifications to the Project are proposed to mitigate effects to salt marsh harvest mouse.

4.2.1.6. CUMULATIVE EFFECTS (FESA)

With the implementation of the proposed avoidance and minimization measures, no direct or indirect impacts to salt marsh harvest mouse are expected. Thus, no cumulative effects to salt marsh harvest mouse are expected as a result of Project implementation.

4.2.2. California Clapper Rail

Important factors for breeding California clapper rail are (1) well-developed sloughs and secondary tidal channels; (2) extensive (dense, tall, lush) cordgrass (Spartina sp.) stands; (3) dense salt marsh vegetation for cover, nest sites, and brooding areas; (4) intertidal mudflats, gradually sloping banks of tidal channels, and cordgrass beds for foraging; (5) abundant invertebrate food resources; and (6) transitional vegetation at the upland edge of the salt marsh as a refuge during high tides (Evens and Page 1984, Harvey 1988). Nests are placed to avoid flooding by tides, yet in dense enough cover to be hidden from predators and to support the relatively large nest (Storey et al. 1988). The vegetation included at 45 California clapper rail nests in the San Francisco Bay Area, was pickleweed (at 96 percent of nests), Pacific cordgrass (45 percent), and salt grass, 18 percent (Harvey, 1988).

4.2.2.1. SURVEY RESULTS

No surveys have been performed in the Project Area for California clapper rail. The nearest documented occurrence of California clapper rail is at Arrowhead Marsh, approximately 2.5 miles north of the Project Area (CNDDB 2008). Suitable foraging habitat for California clapper rail exists within and adjacent to the Oyster Bay Bridge footprint, adjacent to the rip-rap banks of Oyster Bay Slough within relatively newly established stands of invasive, non-native smooth cordgrass. Suitable breeding and suitable foraging habitat exists approximately 400 feet east of the bridge footprint, further up Oyster Bay Slough. This cordgrass stand is also composed of non-native invasive smooth cordgrass. Because of the proximity of the nearest documented occurrence and the suitability of the smooth cordgrass habitat located within Oyster Bay Slough, the presence of California clapper rail is assumed within the Project Area.

4.2.2.2. CRITICAL HABITAT

No critical habitat for California clapper rail is currently designated.

4.2.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

Presence of California clapper rail is assumed within dense stands of non-native, invasive smooth cordgrass located within Oyster Bay Slough. All impacts to California clapper rail within the Project Area will be avoided with the implementation of the following avoidance and minimization measures:

- **California clapper rail work window:** All pile-driving activities will be conducted outside of the California clapper rail breeding season of February 1 to August 31, giving a work window of September 1 to January 31. Pile-driving conducted within this work window allows the Project to comply with the **Not Likely to Adversely Affect** determination given for California clapper rail in the document *U.S. Army Corps of Engineers Proposed Procedures for Permitting Projects that will Not Adversely Affect Selected Listed Species in California* dated November 16, 2006 (Programmatic Consultation Document, Corps 2006). Conducting pile-driving activities within the work window described in the Programmatic Consultation Document will allow the Project to avoid acoustic disturbances to nesting clapper rails that may cause abandonment of eggs and/or young.

- **Composite work window:** All pile-driving activities will be conducted both outside of the California clapper rail breeding season, from September 1 to January 31, and within the Central California coastal steelhead work window of June 1 to November 30 allowed by NOAA/NMFS in South Central San Francisco Bay. Performing all pile-driving activities within the composite work window of September 1 to November 30 will allow the Project to avoid direct effects related to acoustic disturbance from pile-driving activities to both clapper rail and salmonid species within the Project Area.

- ESA Exclusion Fencing will be installed at the upper boundary of cordgrass vegetation to exclude clapper rail from the work area in the vicinity of the bridge abutments on the banks of Oyster Bay Slough. (Appendix A, City of San Leandro Project Plans, Sheet 3)

- If avoidance of the breeding season for pile-driving activities is not feasible, breeding season rail surveys are recommended in areas of suitable habitat within 200 meters of the Project Area. If no rails are detected, pile-driving activities may commence, if breeding rails are detected, a minimum 200 meter buffer is recommended from each nest site. This buffer will be maintained until all young have left the nest.

4.2.2.4. PROJECT EFFECTS

With the implementation of the Avoidance and Minimization Efforts listed above, the proposed project is not likely to adversely affect the California clapper rail. Potential direct impacts to

California clapper rail could occur due to construction activities, particularly during pile-driving activities for the bridge piers and abutments. Direct impacts could include disruption of reproduction and disturbance due to noise from pile-driving that could result in the abandonment of eggs and/or young. No direct impacts to California clapper rail are expected as a result of levee-top trail construction activities.

Potential indirect impacts to California clapper rail could occur due to the increased post-construction public access to the Project Area. Because the Project includes construction of a new segment of Bay Trail, increased usage by pedestrians and bicyclists is expected within the Project Area. Disturbance of breeding and foraging California clapper rail by pedestrians and/or dogs is potentially possible. However, the Project Area is currently surrounded by a major municipal waste and recycling processing center and other industrial areas. Additionally, pedestrians and pets currently have access to the south Oyster Bay Slough bank via the Oyster Bay Regional Shoreline. Therefore, increased disturbance of California clapper rail by increased pedestrian use of the newly-constructed segment of Bay Trail is expected to be minimal.

4.2.2.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Direct and indirect impacts to California clapper rail will be avoided by following the avoidance and minimization efforts listed in Section 4.2.2.3. Therefore, no modifications to the Project are proposed to mitigate effects to California clapper rail.

4.2.2.6. CUMULATIVE EFFECTS (FESA)

With the implementation of the proposed avoidance and minimization measures, no direct or indirect impacts to California clapper rail are expected. Thus, no cumulative effects to California clapper rail are expected as a result of Project implementation.

4.2.3. Central California Coastal Steelhead

The Central California Coast Evolutionarily Significant Unit (ESU) of steelhead trout is listed as Federal Threatened. The Central California Coast ESU includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin (NOAA, 1997).

Steelhead can be either anadromous, living part of their lives in freshwater and some in saltwater, or nonanadromous, living their entire lives in fresh water. The anadromous form are referred to as steelhead, while the nonanadromous form is often referred to as rainbow trout. Juvenile steelhead rear a minimum of 1 and typically 2 or more years in fresh water before migrating to the ocean following smoltification (e.g., the process of physiological change that allows ocean survival). After 2–3 years of ocean residence, adult steelhead return to their natal

stream to spawn as 4- or 5-year-olds (McEwan & Jackson, 1996). Adults feed on aquatic and terrestrial insects, mollusks, crustaceans, fish eggs, minnows, and other small fishes (including other trout); young feed predominantly on zooplankton (Casal 2005).

4.2.3.1. SURVEY RESULTS

No protocol-level surveys have been completed within the Project Area to determine the presence of steelhead. Adult steelhead migrating seasonally for spawning are unlikely to be found in the Project Area or adjacent waters. However, juvenile steelhead may use the Project Area and other coastal habitat for foraging before moving into the ocean; there is a moderate potential for their occurrence.

Spawning habitat is not present in the Study Area as Oyster Bay Slough terminates to the east of the bridge crossing in tidal mudflat areas, but juveniles may wander into Oyster Bay Slough at high tides during outmigrant movements. These outmigrant movements tend to occur in the winter and spring.

Steelhead, a salmonid fish, have Essential Fish Habitat (EFH) within the entire San Francisco Bay which requires special consideration.

4.2.3.2. CRITICAL HABITAT

Critical Habitat for the Central California coastal steelhead is not present in the immediate vicinity of the Project Area. Critical habitat for the steelhead is designated to include all river reaches accessible to listed steelhead in the Sacramento and San Joaquin Rivers and their tributaries in California. Also included are adjacent riparian zones, as well as river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay westward of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge (NMFS).

4.2.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

- **Central California coastal steelhead work window:** All pile-driving activities will be conducted within the Central California coastal steelhead work window allowed by NOAA/NMFS for dredging activities within South Central San Francisco Bay of June 1 to November 30 (NMFS 2008b). Limiting the pile-driving portion of the project to the dredging window stated above reduces the chance that steelhead will be found in the Project Area during construction activities, since outmigrant movements usually occur in the winter and spring.

- **Composite work window:** All pile-driving activities will be conducted both outside of the California clapper rail breeding season, from September 1 to January 31, and within the Central California coastal steelhead work window of June 1 to November 30 allowed by NOAA/NMFS in South Central San Francisco Bay. Performing all pile-driving activities within the composite work window of September 1 to November 30 will allow the Project to avoid direct effects related to acoustic disturbance from pile-driving activities to both clapper rail and salmonid species within the Project Area.

4.2.3.4. PROJECT EFFECTS

With the implementation of the Avoidance and Minimization Efforts listed above, the proposed project is not likely to adversely affect the Central California coast steelhead. Potential direct impacts to steelhead could occur due to construction activities that take place below the mean high water mark (MHWM) associated with the bridge construction. Pile-driving activities below MHWM could temporarily impact migrating steelhead that are present during outmigrant movements occurring between December 1 to May 31, causing physiological damage, hemorrhaging, and/or death. Depending on the sound pressure levels, duration, and distance from the pile-driving activities, impacts on fish range from little to no physiological damage, to slight hemorrhaging, to complete rupture of the body cavity. Larger fish are less susceptible to injury from sound pressure levels. 180 decibels is considered the threshold over which significant damage to fish can occur (Woodbury 2004).

Indirect impacts to steelhead should not occur as a result of the Project. Sediment release to the water column resulting from pile-driving activities will be short-term, localized, and minor. Conducting work within the NOAA work window from June 1 to November 30 will minimize the possibility that a short-term degradation of the local water quality may impact these species.

4.2.3.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Direct and indirect impacts to Central California coastal steelhead will be avoided by the implementation of the avoidance and minimization efforts listed in Section 4.2.3.3. Therefore, no modifications to the Project are proposed to mitigate effects to steelhead.

4.2.3.6. CUMULATIVE EFFECTS (FESA)

With the implementation of the proposed avoidance and minimization measures, no direct or indirect impacts to Central California coastal steelhead are expected. Thus, no cumulative effects to steelhead are expected as a result of Project implementation. The area of work is minimal compared to the greater Bay and the disturbance and sedimentation created by this project will be small, localized, short-term, and quickly flushed out by tidewaters. Noises

associated with pile-driving activities may cause federally-listed fish species to avoid the area temporarily, but since the construction window avoids spawning and other critical stages of their life cycle, the disturbance should be negligible.

4.2.4. Central Valley Fall/Late Fall-Run Chinook Salmon

Chinook salmon are easily the largest of any salmon, with adults often exceeding 40 pounds; individuals over 120 pounds have been reported. Chinook salmon are anadromous (adults migrate from a marine environment into the fresh water streams and rivers of their birth) and semelparous (spawn only once and then die).

There are different seasonal "runs" (ie., spring, summer, fall, or winter) or modes in the migration of Chinook salmon from the ocean to freshwater. These runs have been identified on the basis of when adult Chinook salmon enter freshwater to begin their spawning migration. However, distinct runs also differ in the degree of maturation at the time of river entry, the thermal regime and flow characteristics of their spawning site, and their actual time of spawning. Freshwater entry and spawning timing are believed to be related to local temperature and water flow regimes.

Adult female Chinook will prepare a spawning bed, called a redd, in a stream area with suitable gravel composition, water depth and velocity. The adult female Chinook may deposit eggs in 4 to 5 "nesting pockets" within a single redd. After laying eggs, adult Chinook will guard the redd from 4 to 25 days before dying. Chinook salmon eggs will hatch, depending upon water temperatures, between 90 to 150 days after deposition. Eggs are deposited at a time to ensure that young salmon fry emerge during the following spring when the river or estuary productivity is sufficient for juvenile survival and growth. Juvenile Chinook may spend from 3 months to 2 years in freshwater after emergence and before migrating to estuarine areas as smolts, and then into the ocean to feed and mature. Coastwide, Chinook salmon remain at sea for 1 to 6 years (more commonly 2 to 4 years), with the exception of a small proportion of yearling males (called jack salmon) which mature in freshwater or return after 2 or 3 months in salt water.

Chinook salmon feed on terrestrial and aquatic insects, amphipods, and other crustaceans while young, and primarily on other fish when older (PSMFC, 1996).

4.2.4.1. Survey Results

No protocol-level surveys have been completed within the Project Area to determine the presence of steelhead. Although spawning habitat is not present in the vicinity of the Project Area, it is moderately likely that migrant adults, smolts, and/or rearing juveniles are seasonally present in aquatic habitat adjacent to the Project Area.

Three distinct runs of chinook salmon migrate through aquatic habitat located adjacent to the Project Area: spring run (federal threatened), winter run (federal endangered), and fall/late-fall run (federal species of concern). The runs of Chinook salmon in California are differentiated by the maturity of fish entering fresh water, time of spawning migrations, spawning areas, incubation times, incubation temperature requirements, and migration timing of juveniles (Moyle et al. 1995).

Spring-run Chinook salmon enter the rivers from the ocean from March through May, the period of snow-melt flows. The Sacramento-San Joaquin population is now reduced to small runs in Tehama and Butte counties, where they spawn from late-August to mid-October. The timing of spring-run outmigrant movement from this population has not yet been clearly determined, but it seems to be more variable than other Chinook salmon runs. Some juveniles may move downstream soon after hatching in March-April and others may move downstream the following fall as yearlings. The outmigrants may spend some time in the Sacramento River or estuary to gain additional size before going out to sea but most have presumably left the system by mid-May (Moyle et al. 1995).

Winter-run chinook salmon return to the upper Sacramento River and its tributaries in winter, but delay spawning until sometime between May and August. Juveniles spend five to nine months in the river and Sacramento-San Joaquin Estuary before entering the ocean. They spend three to four years at sea before returning to spawn as adults.

Adult fall-run Chinook salmon migrate up the Sacramento-San Joaquin Delta and into the major rivers generally from July to January. Spawning extends from as early as the beginning of October to January, and peak spawning typically occurs from mid to late-November. Juveniles migrate to the ocean between late December and April.

Late-fall Chinook appear to spawn in the mainstem of the Sacramento River, which they enter from October through February. Spawning occurs in January, February, and March. The juveniles hold in the river for nearly a year before moving out to sea the following December through March (Moyle et al. 1995). Juvenile mortality is a factor affecting late-fall Chinook abundance as it is for all runs of salmon in the Sacramento-San Joaquin drainage. Small numbers of outmigrants are presumably entrained at every irrigation diversion that is operating during the migration period. At the same time, extensive bank alteration, especially rip-rapping, reduces the amount of cover available to protect the outmigrants from striped bass and other predators.

Chinook salmon have EFH within the entire San Francisco Bay which requires special consideration. The proposed project should not have significant adverse impacts to chinook EFH.

4.2.4.2. CRITICAL HABITAT

No Critical Habitat for Central Valley fall/late fall-run Chinook salmon is currently designated.

4.2.4.3. AVOIDANCE AND MINIMIZATION EFFORTS

- **Composite work window:** All pile-driving activities will be conducted both outside of the California clapper rail breeding season, from September 1 to January 31, and within the Central California coastal steelhead work window of June 1 to November 30 allowed by NOAA/NMFS in South Central San Francisco Bay. Performing all pile-driving activities within the composite work window of September 1 to November 30 will allow the Project to avoid direct effects related to acoustic disturbance from pile-driving activities to both clapper rail and salmonid species within the Project Area.

- No NOAA/NMFS dredging work window is given for Chinook salmon, although adhering to the work window designated by NOAA/NMFS for steelhead will significantly reduce the chances that juvenile Chinook will be found within the channel of Oyster Bay Slough. Limiting the pile-driving portion of the project to the dredging window stated above reduces the chance that Chinook will be found in the Project Area during construction activities, since outmigrant movements usually occur in the winter and spring.

4.2.4.4. PROJECT EFFECTS

With the implementation of the Avoidance and Minimization Efforts listed above, the proposed project is not likely to adversely affect the Central Valley fall/late fall-run Chinook salmon. Potential direct impacts to Chinook salmon could occur due to construction activities that take place below the mean high water mark (MHWM) associated with the bridge construction. Pile-driving activities below MHWM could temporarily impact migrating Chinook salmon, causing physiological damage, hemorrhaging, and/or death. Depending on the sound pressure levels, duration, and distance from the pile-driving activities, impacts on fish range from little to no physiological damage, to slight hemorrhaging, to complete rupture of the body cavity. Larger fish are less susceptible to injury from sound pressure levels. 180 decibels is considered the threshold over which significant damage to fish can occur (Woodbury 2004).

Indirect impacts to Chinook salmon should not occur as a result of the Project. Sediment release to the water column resulting from pile-driving activities will be short-term, localized, and minor. Conducting work within the NOAA work window from June 1 to November 30 will

minimize the possibility that a short-term degradation of the local water quality may impact these species.

4.2.4.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Direct and indirect impacts to Chinook salmon will be avoided by the implementation of the avoidance and minimization efforts listed in Section 4.2.4.3. Therefore, no modifications to the Project are proposed to mitigate effects to Chinook salmon.

4.2.4.6. CUMULATIVE EFFECTS (FESA)

With the implementation of the proposed avoidance and minimization measures, no direct or indirect impacts to Central California coastal steelhead are expected. Thus, no cumulative effects to steelhead are expected as a result of Project implementation. The area of work is minimal compared to the greater Bay and the disturbance and sedimentation created by this project will be small, localized, short-term, and quickly flushed out by tidewaters. Noises associated with pile-driving activities may cause federally-listed fish species to avoid the area temporarily, but since the construction window avoids spawning and other critical stages of their life cycle, the disturbance should be negligible.

4.3. Essential Fish Habitat

Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). The EFH guidelines under 50 CFR 600.10 further interpret the EFH definition as follows:

Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate. Substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities. Necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

In Section 305 (b)(2) of the amended Magnuson - Stevens Act, Congress directs each Federal Agency to consult with the Secretary with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH identified under the Magnuson - Stevens Act.

The Act requires that EFH be identified for all species which are federally managed. This includes species managed by the Councils under Council Fishery Management Plans (FMPs), as

well as those managed by the National Marine Fisheries Service under FMPs developed by the Secretary of Commerce.

The open waters within and adjacent to the Project Area are considered EFH for the following FMP species discussed in Table 3.

Table 3. Fisheries Management Plan (FMP) Species Within Vicinity of Proposed Project.

Common name	Scientific name	Distribution in South-Central SF Bay	Potential for Occurrence in Project Area	Comments
Coastal Pelagics Fishery Management Plan (South-Central SF Bay)				
Northern anchovy	*Engraulis mordax*	Abundant	Moderate	Abundant spring to fall. Some spawning occurs in SF Estuary.
Pacific sardine	*Sardinops sagax*	Present	Moderate	Sardine move in schools; filter-feed in the water column.
Goundfish Fishery Management Plan (South-Central SF Bay)				
English sole	*Pleuronectes vetulus*	Abundant	High	Juveniles abundant. SF Estuary provides important nursery habitat.
Starry flounder	Platichthys stellatus	Present	High	Juveniles common, favoring brackish waters.
Leopard shark	*Triakis semifasciata*	Present	High	Common. Pupping habitat is mostly in South SF Bay. Found especially around piers and jetties.
Spiny dogfish	*Squalus acanthias*	Present	Moderate	Moves in large schools; migrates seasonally; opportunistic feeder.
Brown rockfish	*Sebastes auriculatus*	Present	Moderate	Common resident. Juveniles often occur in rocky intertidal or rip-rap areas. The Bay appears to be an important nursery area for juveniles.

Common name	Scientific name	Distribution in South-Central SF Bay	Potential for Occurrence in Project Area	Comments
Cabezon	*Scorpaenichthys marmoratus*	Few	Moderate	Cabezon prefer rocky areas with dense algal growth; in shallower water they migrate in and out with the tide to feed.
Big skate	*Raja occilata*	Present	High	Forages on sand and mud bottoms in intertidal areas.
Soupfin shark	*Galeorhinus zyopterus*	Present	High	Abundant coastal-pelagic species. They are often associated with the bottom, inhabiting bays and muddy shallows. San Francisco Bay is used to some extent as pupping grounds.
Sand sole	*Psettichthys melanostictus*	Rare	Moderate	A shallow water species that prefers sandy bottoms.
Lingcod	*Ophiodon elongatus*	Rare	Moderate	Prefer to inhabit rocky areas; larvae found in near-surface marine waters and estuarine areas; adults found in shallow inter-tidal areas of bays near algae and seagrass beds.

4.3.1. Survey Results

The Pacific Groundfish Fishery Management Plan (FMP) and Coastal Pelagics FMP both identify Oyster Bay Slough as essential fish habitat for various life stages of fish species included in the FMPs, as listed in Table 3 above.

One of the two species in the Coastal Pelagics FMP is well represented in the Project Area. The northern anchovy has the largest biomass and is the most abundant fish in San Francisco Bay, being most abundant downstream of the Carquinez Strait. It is an important forage species for larger predators and consumes substantial amounts of phytoplankton and zooplankton. The bay is a favorable habitat for reproduction because of ample food for adults to produce eggs, abundant zooplankton prey for larvae, and protection of eggs and larvae from offshore transport to less productive areas by coastal upwelling. There is a bait fishery for northern anchovy at the

mouth of the Bay. The Pacific sardine is present in the region but not common. Populations of northern anchovy increased dramatically following the decline of sardine stock, suggesting competition between these species (Goals Project 2000).

Of the ten species present from the Groundfish FMP, five species (English sole, Starry flounder, Leopard shark, Big skate and Soupfin shark) are considered common in the region and have a moderate to high potential for occurrence in the Project Area. Suitable habitat for English sole includes soft bottoms composed of fine sands and mud; juveniles reside primarily in shallow-water coastal, bay, and estuarine areas. Suitable habitat for Starry flounder includes shallow to deep subtidal mud and sand flats. Juvenile rearing occurs in the shallow areas of Suisun and San Pablo bays. Leopard sharks prefer sandy and muddy bottom areas. Shallow mud and sand flats are used for foraging during high tide. Big skate inhabits inner and outer shelf areas from three to 200 meters in depth and prefers soft bottom substrates. Juveniles are associated with soft mud bottoms. Soupfin shark are often associated with the bottom, and inhabit bays and muddy shallows Although San Francisco Bay and Tomales Bay are used to a certain extent as pupping grounds, the primary nursery grounds are in southern California inshore areas (south of Point Conception).

4.3.2. Critical Habitat

Critical Habitat is not designated for species included in the Coastal Pelagics and Grounfish FMPs. Oyster Bay Slough is listed as Essential Fish Habitat for species in both FMPs.

4.3.3. Avoidance and Minimization Efforts

Potential impacts to EFH from construction activities could include modification of the water column and benthic habitat from: (1) high underwater sound pressure levels generated during pile installation, (2) increased turbidity, and (3) replacement of soft benthic substrate with hard artificial substrate. These potential adverse effects will be minimized by the following project conditions and site characteristics.

The three permanent bridge pilings and the temporary trestle pilings, if used, will be installed using a wood block cushion between the hammer and the pile. The smallest hammer weight feasible will also be used. The bridge is designed with three four foot diameter piles rather than multiple smaller piles. This design will minimize the duration of sound pressure impacts to benthic habitats and the water column.

An increased level of turbidity is likely to be localized within the action area and is expected to dissipate quickly with prevailing currents.

The three-pier design of the Oyster Bay Slough Bridge reduces the amount of soft benthic substrate that will be replaced with hard artificial substrate. If the trestle construction option is used, the increased amount of soft benthic substrate replaced with hard artificial substrate will be a temporary impact only. The proposed Oyster Bay Slough Bridge piers could modify benthic habitat by replacing soft bottom sediment with artificial hard substrate and modify water column habitat by the creation of vertical structure. This vertical structure could attract pelagic and groundfish EFH species, creating an area of increased predation pressure from fish-eating birds. However, San Francisco Bay contains a large number of pilings that are part of over water structures such as docks, piers, and marinas which serve as artificial perches for piscivorous birds, and the small increase in piscivorous bird perch area provided by the proposed bridge is minimal. Since the three pier design of the bridge minimizes the amount of EFH that is modified, no additional avoidance and minimization measures are proposed for the possible increased predation pressure from piscivorous birds that may result from implementation of the proposed project.

Direct impacts to the EFH should be seen as less than significant due to the small area and short duration of construction. All potential direct impacts will be temporary. No indirect effects to EFH are anticipated as a result of the proposed project.

4.3.4. Project Effects

With the implementation of the Avoidance and Minimization Efforts listed above, the proposed project is not likely to adversely affect Essential Fish Habitat. Potential direct effects to EFH from construction activities could include modification of the water column and benthic habitat from: (1) high underwater sound pressure levels generated during pile installation, (2) increased turbidity, and (3) replacement of soft benthic substrate with hard artificial substrate.

4.3.5. Modifications to the Project to Mitigate Effects

With the implementation of the minimization efforts stated in Section 4.3.2 above, effects to EFH in Oyster Bay Slough are expected to be minimal. Therefore, no modifications to the project to mitigate effects are proposed.

4.3.6. Cumulative Effects (FESA)

No cumulative effects to EFH are expected as a result of the proposed project. The area of work is minimal compared to the greater Bay, and the disturbance and sedimentation created by this

project will be small, localized, short-term, and quickly flushed out by tidewaters. Noises associated with construction may cause federally-listed fish species to avoid the area temporarily, but since the construction window avoids spawning and other critical stages of their life cycle, the disturbance should be negligible.

Chapter 5. Conclusions and Determination

5.1. Conclusions

There are no anticipated direct or indirect impacts to federally-listed plant or wildlife species resulting from Project implementation. Of the 12 federally-listed plant species with documented occurrences in the vicinity of the Project Area, none have potential to occur within the Project Area due to lack of suitable habitat and the disturbed nature of the Project Area soils. Of the 32 federally-listed wildlife species with documented occurrences within the vicinity of the Project Area or potential to occur within the Project Area vicinity, two species; Central California coastal steelhead and Central Valley fall/late fall-run Chinook salmon have a moderate potential to be found in the Project Area, and two species; salt marsh harvest mouse and California clapper rail are assumed to be present in the Project Area due to the presence of suitable habitat. With the implementation of the proposed avoidance and minimization efforts listed in Chapter 4, including working within USFWS and NMFS-designated work windows, all direct and indirect impacts to these species will be avoided.

5.2. Determination

Salt marsh harvest mouse (*Reithrodontomys raviventris*). The Project is **not likely to adversely affect** salt marsh harvest mouse. Avoidance and minimization efforts will enable the Project to avoid all direct and indirect impacts to this species. These efforts include hand-clearing brush that may be used as cover for mice and the construction of a USFWS-approved exclusion fence to prevent mice from entering the construction area. No temporary or permanent loss of pickleweed habitat is expected to occur as a result of Project implementation.

California clapper rail (*Rallus longirostris obsoletus*). The Project is **not likely to adversely affect** California clapper rail. Avoidance and minimization efforts including performing all pile-driving activities outside of the California clapper rail breeding season will enable the Project to avoid all direct and indirect impacts to this species. Approximately 140 square feet of non-

native, invasive smooth cordgrass that may be used for California clapper rail foraging habitat will be permanently impacted by shading effects from the proposed bridge, but this impact is expected to be minor due to the aspect, orientation and elevation of the bridge over the mudflats of Oyster Bay Slough.

Central California coastal steelhead (*Oncorhynchus mykiss*). The Project is **not likely to adversely affect** Central California coastal steelhead. Avoidance and minimization efforts including performing all pile-driving activities at or below MHWM outside of the Central California coastal steelhead outmigrant movement period will enable to the Project to avoid all direct and indirect impacts to this species.

Central Valley fall/late fall-run Chinook Salmon (*Oncorhynchus tshawytscha*). The project is **not likely to adversely affect** Central Valley fall/late fall-run Chinook salmon. Avoidance and minimization efforts including performing all pile-driving activities at or below MHWM outside of the Central California coastal steelhead work window allowed by NOAA/NMFS will enable the Project to avoid all direct and indirect impacts to this species.

Essential Fish Habitat. The project is **not likely to adversely affect** Essential Fish Habitat. Avoidance and minimization efforts including performing all pile-driving activities at or below MHWM outside of the Central California coastal steelhead work window allowed by NOAA/NMFS will enable the Project to avoid all direct and indirect impacts to Essential Fish Habitat within Oyster Bay Slough.

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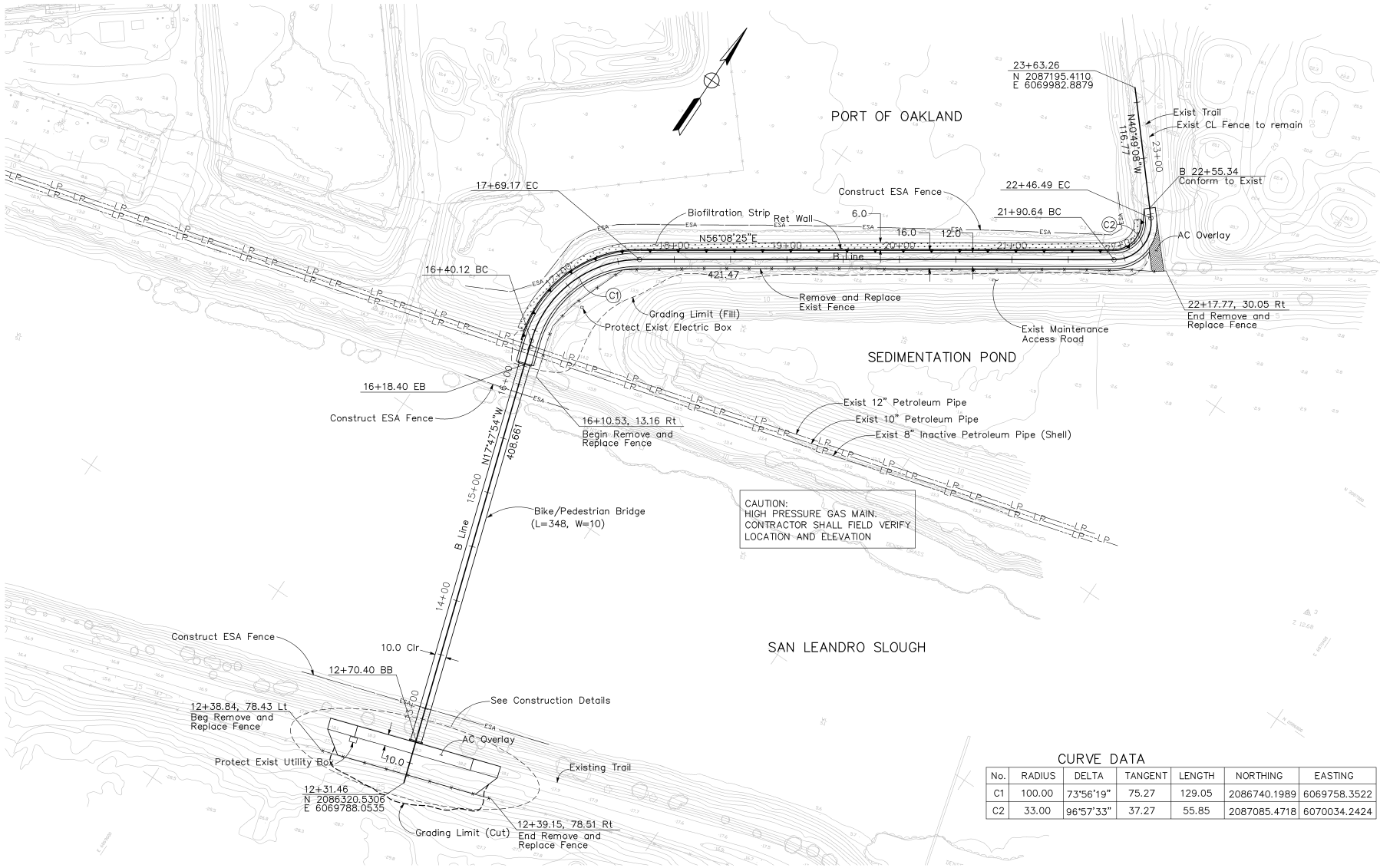
Appendix A Oyster Bay Bridge at Oyster Bay Slough Project Design Plans



CURVE DATA

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C2	33.00	96°57'33"	37.27	55.85	2087085.4718	6070034.2424

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.

CITY OF SAN LEANDRO
INCORPORATED 1872

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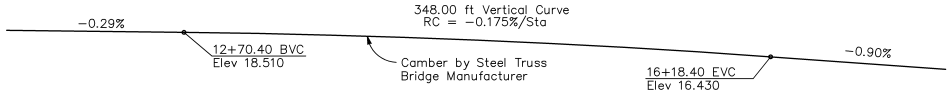
NO.	DATE	REVISION

DESIGNED BY BP DATE 10/12/04
DRAWN BY BP DATE 10/12/04
PROJECT MGR. Po Chen DATE 10/12/04
TRANS ADMIN. DATE
SENIOR ENGR. DATE
APPROVED BY: DATE
CITY ENGINEER, R.C.E. No. 34870

CITY OF SAN LEANDRO

SAN LEANDRO BAY TRAIL
PLAN

SHEET 3 OF 17
JOB NO.
SCALE 1"=40'
DWG CASE



PROFILE
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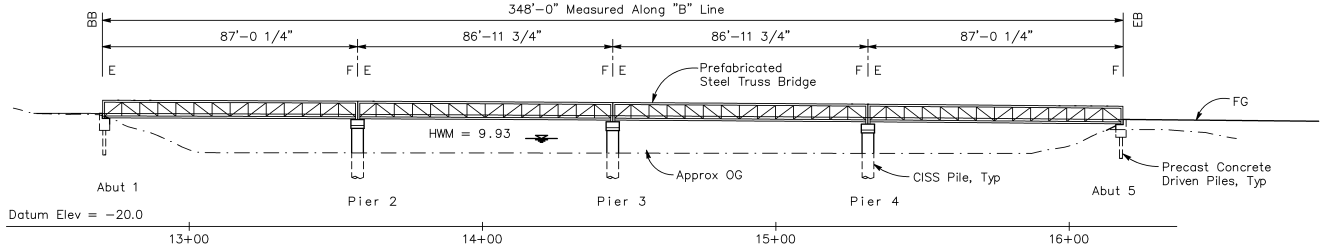


ELEVATION
1" = 20'

Note:
E=Expansion Bearing
F=Fixed Bearing

Pile Data

Location	Diameter	Design Loading (Service Load)	Nominal Resistance Compression	Design Tip Elevation
Abut 1	12"	25 Tons	50 Tons	−27.5 ft
Bent 2	48"	100 Tons	200 Tons	−60.0 ft
Bent 3	48"	100 Tons	200 Tons	−60.0 ft
Bent 4	48"	100 Tons	200 Tons	−60.0 ft
Abut 5	12"	25 Tons	50 Tons	−41.0 ft

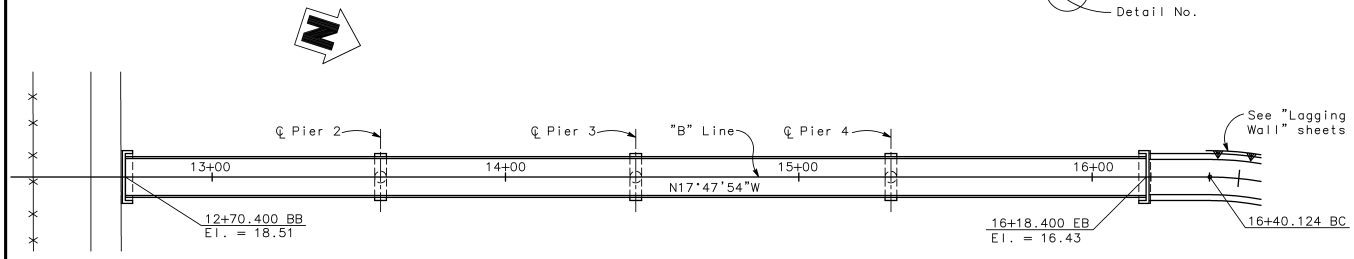
ABBREVIATIONS

cont. – continuous
A.B. – anchor bolt
T&B – Top & Bottom
PT – Pressure Treated
DF – Douglas Fir

INDEX TO STANDARD PLANS DATED JULY, 2002

A10A	Abbreviations
A10B	Symbols
A62–C	Limits of Payment for Excavation and Backfill – Bridge
B0–1	Bridge Details
B0–3	Bridge Details
B0–13	Bridge Details

Caltrans Standard Plan Sheet No.
Detail No.



PLAN
1" = 20'

GENERAL NOTES

1. Prefabricated steel bridge shall be designed, detailed and fabricated according to the latest provisions of the AASHTO Standard Specifications for Highway Bridges, AISC Manual of Steel Construction, and the Structural Welding Code (ANSI/AWS D1.1–88), and CBC 2001.
2. Bridge shall be made from cold formed carbon steel tubing conforming to ASTM A847 (Fy = 50,000 psi); and incidental steel angles, plates and shapes steel conforming to ASTM A572 (Fy = 50,000 psi). Field bolted splices shall be with ASTM A325 bolts. Minimum thickness of closed structural tubular members shall be 1/4 inch.
3. Welding shall be performed with series E80 Electrodes compatible with the base metal being welded. All fabrication, filler materials & Welder's certifications shall be per latest AWS codes.
4. All verticals shall be plumbed. All top & bottom chord shop splices to be complete penetration type welds. Weld between top chord & end vertical shall be full or partial penetration, ground flush.
5. Unless otherwise noted, welded connections shall be fillet welds (or have the effective throat of a fillet weld) of a size equal to the thickness of the lightest gauge member in the connection. All connections shall be welded all around, full length of the contacts.
6. Prefabricated steel bridge shall be cleaned and painted in accordance with the special provisions.
7. Composite concrete deck shall consist of minimum 5" thick lightweight concrete fill (min f'c = 4,000 psi) into 22 Ga min, galvanized, SDI certified metal deck. Composite slab shall be designed to carry 200 psf uniform live load. Reinforced concrete metal deck design and metal deck installation shall be the responsibility of the bridge manufacturer. Bridge manufacturer shall furnish all reinforcing bar details and concrete construction & joint details. Contractor shall furnish & field install reinforcing bars and concrete per bridge manufacturer's plans. All concrete joints shall be leak–proof and concrete surface shall be finished & sealed per bridge manufacturer's requirements. Bridge deck finish shall be medium broom finish.
8. Bridge design is based on combinations of the following loads which will produce maximum critical member stresses:
   A) 85 psf uniform live load on the full deck area or one (posted) 20 Kip vehicle load plus impact. The load shall be distributed as a four–wheel vehicle with 80% of load on the rear wheels. The wheel shall be spaced for a pickup truck driving down the center of the bridge.
   B) 35 psf wind load on the full height of the bridge, as if enclosed; or 75 psf wind load on actual surfaces of the members.
   C) 20 psf upward force applied at the windward quarter point of the transverse bridge width (AASHTO 3.15.3).
   D) Seismic Loading: Site–dependent response spectrum (Soil Profile Type E, PBA = 0.46g). For ARS Curve, see "Abutment Details No. 2" sheet.
9. Safety rails, pipe handrails and all elements shall be free of sharp edges. Maximum spacing between safety rails shall be 4" and locations shall be coordinated with pipe handrail location. Safety rails and pipe handrails shall be designed in accordance with CBC 2001.
10. The Contractor shall submit structural design calculations, camber calculations, shop plans for including all fabrication details, vent/drain holes, welds, splice details, deck concrete and reinforcing, deck joints, all miscellaneous details, etc. prepared and signed by a California Registered Civil Engineer for City's review, prior to fabrication.

Note:
Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

CITY OF SAN LEANDRO

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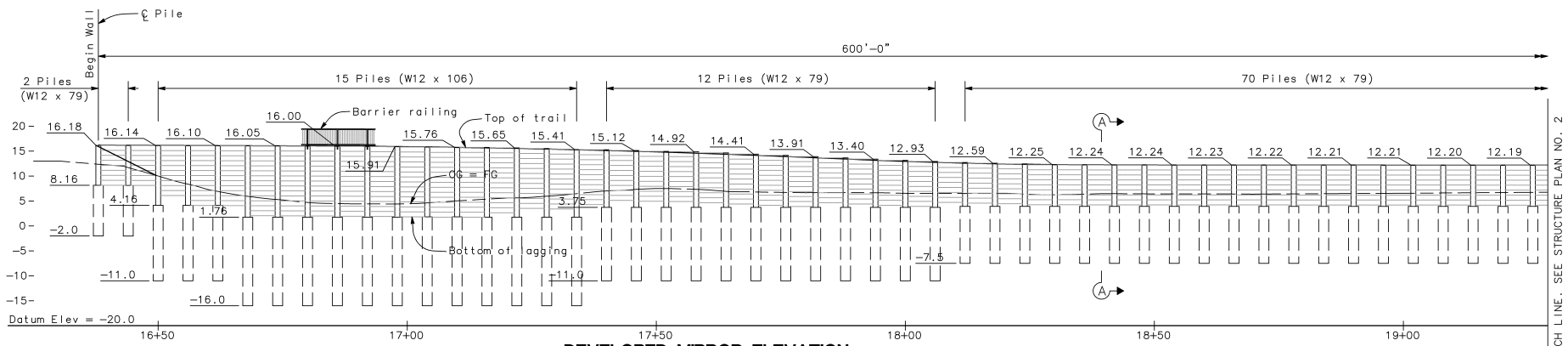
NO.	DATE	REVISION

DESIGNED BY	TW	DATE 11–22–04
DRAWN BY	TW	DATE 11–22–04
PROJECT MGR.	PC	DATE 11–22–04
TRANS ADMIN.		DATE
SENIOR ENGR.		DATE
APPROVED BY:		DATE
CITY ENGINEER, R.C.E. No. 34870		

SAN LEANDRO BAY TRAIL
PEDESTRIAN BRIDGE

GENERAL PLAN

SHEET 8 OF 17
JOB NO. 54–04174B
SCALE AS SHOWN
DWG ____ CASE ____

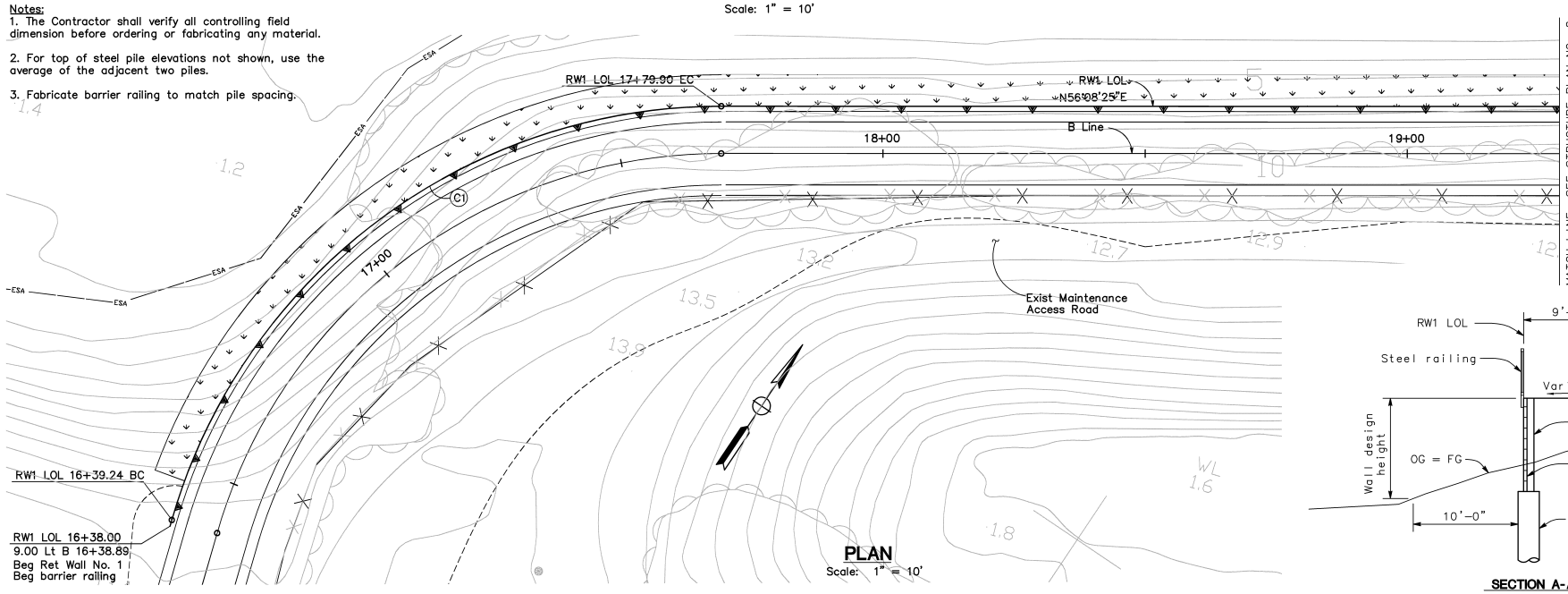


DEVELOPED MIRROR ELEVATION

Scale: 1" = 10'

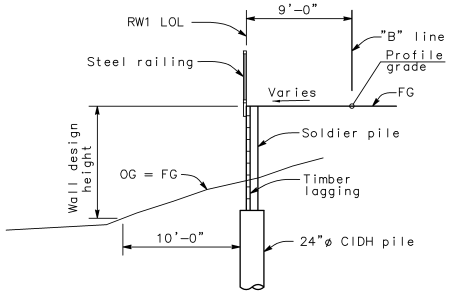
Notes:

1. The Contractor shall verify all controlling field dimension before ordering or fabricating any material.
2. For top of steel pile elevations not shown, use the average of the adjacent two piles.
3. Fabricate barrier railing to match pile spacing.



PLAN

Scale: 1" = 10'



SECTION A-A

1' = 5'

CURVE DATA

No.	RADIUS	DELTA	TANGENT	LENGTH	NORTHING	EASTING
C1	109.00	73°56'19"	82.05	140.66	2086740.1989	6069758.3522

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.

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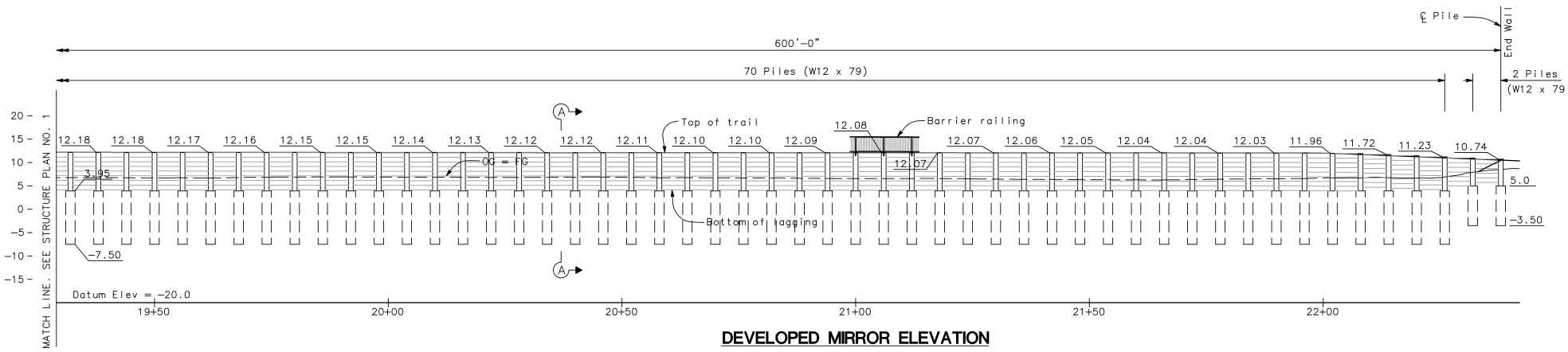
PROJECT MGR.	PC	DATE 11-22-04
TRANS ADMIN.		DATE
SENIOR ENGR.		DATE
APPROVED BY:		DATE

CITY ENGINEER, R.C.E. No. 34870

CITY OF SAN LEANDRO

SAN LEANDRO BAY TRAIL
RETAINING WALL NO. 1 - LAGGING WALL
STRUCTURE PLAN NO. 1

SHEET 14 OF 17
JOB NO.
SCALE AS SHOWN
DWG CASE

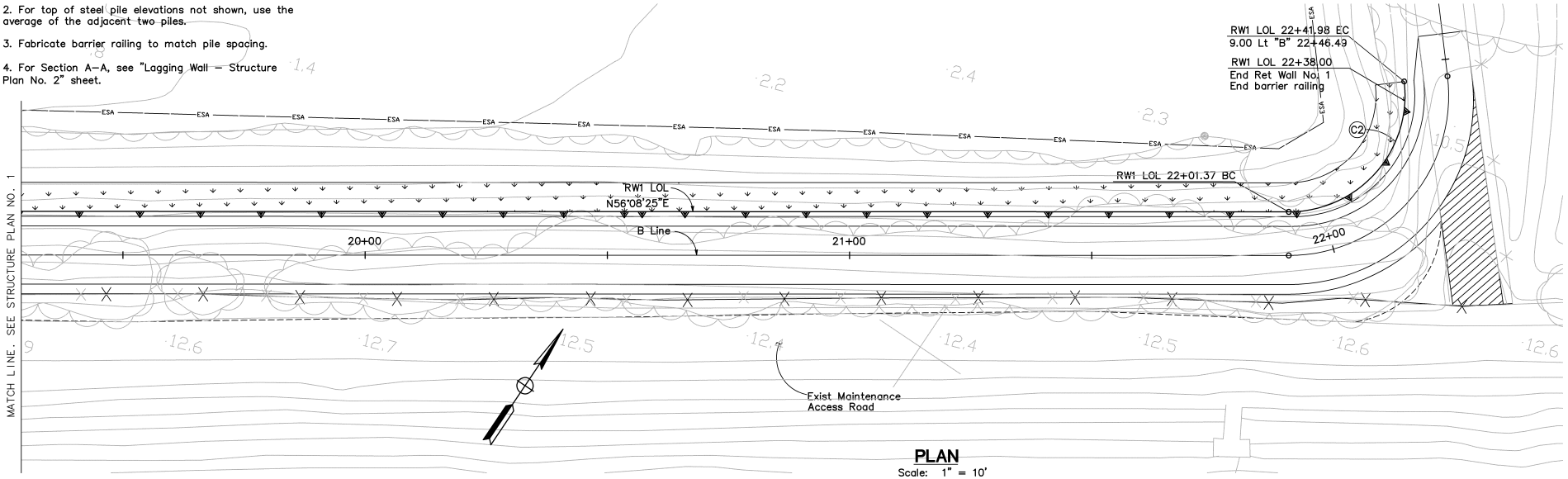


DEVELOPED MIRROR ELEVATION

Scale: 1" = 10'

Notes:

1. The Contractor shall verify all controlling field dimension before ordering or fabricating any material.
2. For top of steel pile elevations not shown, use the average of the adjacent two piles.
3. Fabricate barrier railing to match pile spacing.
4. For Section A–A, see "Lagging Wall – Structure Plan No. 2" sheet.



PLAN

Scale: 1" = 10'

CURVE DATA

No.	RADIUS	DELTA	TANGENT	LENGTH	NORTHING	EASTING
C2	24.00	96°57'33"	27.11	40.61	2087085.4718	6070034.2424

BEFORE YOU DIG, CALL UNDERGROUND SERVICE ALERT 1(800)227-2600

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PROJECT MGR. PC DATE 11-22-04
TRANS ADMIN. DATE
SENIOR ENGR. DATE
APPROVED BY: DATE

CITY ENGINEER, R.C.E. No. 34870

SAN LEANDRO BAY TRAIL
RETAINING WALL NO. 1 - LAGGING WALL
STRUCTURE PLAN NO. 2

SHEET 15 OF 17
JOB NO.
SCALE AS SHOWN
DWG CASE

Appendix B Representative Project Area Photographs

Appendix E. Representative Site Photographs
Top: Smooth cordgrass has colonized portions of Oyster Bay Slough adjacent to the north levee. Photo shows approximate area to be shaded.
Bottom: North levee viewed from south levee at low tide. The bridge crossing is located to the left of the chain link fence.
Photos taken April 29, 2004

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Appendix E. Representative Site Photographs
Top: Stakes mark approximate extent of bridge footprint and wetland vegetation to be shaded on north levee.
Bottom: Looking east from approximate location of north levee bridge abutment. Stakes mark extent of bridge footprint.

Photos taken April 29, 2004

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Appendix E. Representative Site Photographs
Top: Photo taken from location of south levee bridge abutment site looking north. Stakes mark approximate extent of bridge footprint.
Bottom: Photo taken from south levee abutment site, looking west. Stake marks extent of bridge footprint.
Photos taken January 2008

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Appendix E. Representative Site Photographs
Top: Photo taken from south levee bridge abutment site, looking east.
Bottom: Photo taken from approximate extent of levee-top Bay Trail, looking west. Non-tidal salt marsh is present, north of the trail footprint.

Photos taken January 2008

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Appendix C Wetland Delineation Report

Jurisdictional Wetland Delineation

Oyster Bay Bridge at Oyster Bay Slough
ALAMEDA COUNTY, CALIFORNIA

Prepared For:

BASELINE Environmental Consulting
Attention: Yane Nordhav
5900 Hollis St., Suite D
Emeryville, CA 94608
Phone: (510) 420-8686

Contact:
Phil Greer
greer@wra-ca.com

Date:
January 2008

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2169-G East Francisco Blvd., San Rafael, CA 94901 (415) 454-8868 tel (415) 454-0129 fax info@wra-ca.com www.wra-ca.com

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Appendix C - List of Observed Plant Species
Appendix D - Calculated Tidal Datums

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1.0 INTRODUCTION

1.1 Project Background

The proposed project is located in the City of San Leandro, in Alameda County, California, in an area comprised of land owned by the City of San Leandro, the East Bay Regional Parks District, and the Port of Oakland near the mouth of Oyster Bay Slough (Study Area). The proposed project includes the construction of a pedestrian/bicycle bridge and a 630-foot long paved trail to connect the Bay Trail located in Oyster Bay Regional Shoreline with existing Bay Trail facilities on the north side of Oyster Bay Slough, located on property owned by the Port of Oakland. The new portion of levee-top trail and the new bridge would be part of the Bay Trail system. The bridge would span Oyster Bay Slough, a shallow, remnant embayment located between Oyster Bay Regional Shoreline and the City of San Leandro wastewater treatment facility and an existing levee trail along the Galbraith Golf Course to the north. The proposed project would fill one of the final links in the regional Bay Trail system in the San Leandro area, providing greatly increased public access to the Bay shoreline in what is now an inaccessible area. The proposed project would provide a continuous bike path from Oakland to Hayward.

On January 8, 2008, WRA conducted a routine wetland delineation within the Study Area to determine the presence of potential wetlands and waters subject to federal jurisdiction under Section 404 and Section 10 of the Clean Water Act and under state jurisdiction under the McAteer-Petris Act. This report presents the results of this delineation.

1.2 Regulatory Background

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act gives the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) regulatory and permitting authority regarding discharge of dredged or fill material into “navigable waters of the United States”. Section 502(7) of the Clean Water Act defines navigable waters as “waters of the United States, including territorial seas.” Section 328 of Chapter 33 in the Code of Federal Regulations defines the term “waters of the United States” as it applies to the jurisdictional limits of the authority of the Corps under the Clean Water Act. A summary of this definition of “waters of the U.S.” in 33 CFG 328.3 includes (1) waters used for commerce and subject to tides; (2) interstate waters and wetlands; (3) “other waters” such as intrastate lakes, rivers, streams, and wetlands; (4) impoundments of waters; (5) tributaries of waters; (6) territorial seas; and (7) wetlands adjacent to waters. Therefore, for purposes of determining Corps jurisdiction under the Clean Water Act, “navigable waters” as defined in the Clean Water Act are the same as “waters of the U.S.” defined in the Code of Federal Regulations above.

The limits of Corps jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows: (a) *Territorial seas:* three nautical miles in a seaward direction from the baseline; (b) *Tidal waters of the U.S.:* high tide line or to the limit of adjacent non-tidal waters; (c) *Non-tidal waters of the U.S.:* ordinary high water mark or to the limit of adjacent wetlands; (d) *Wetlands:* to the limit of the wetland.

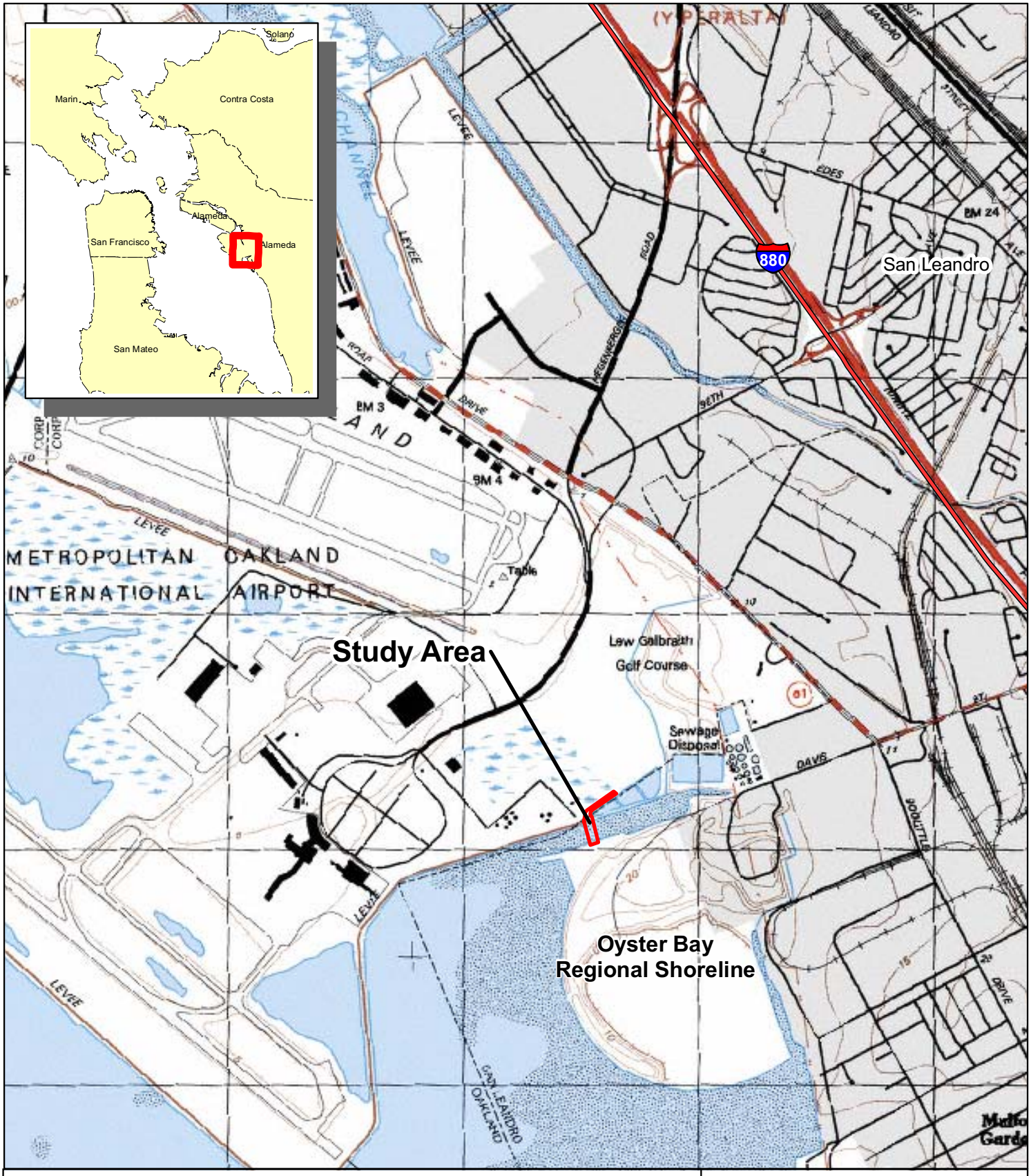


Figure 1. Study Area Location Map

Bay Trail Bridge at Oyster Bay Slough
San Leandro, California

N

0 1,000 2,000 Feet

wra
ENVIRONMENTAL CONSULTANTS

Date: September 2007
Basemap: USGS Topo Quad
Map By: Derek Chan
Filepath: L:\Acad 2000Files\13000\13056\GIS\Arcmap\Fig1_LocMap_20070921.mxd

Section 10 of the Rivers and Harbors Act of 1899

The Corps of Engineers also has jurisdiction over "navigable waters" under Section 10 of the Rivers and Harbors Act of 1899. "Navigable waters of the U.S.", as defined in 33 CFR Part 329, are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity. The upper limit of a navigable water is at the point along its length where the character of the river changes from navigable to non-navigable, such as at a major fall or rapids. The limit of Corps jurisdiction in navigable waters under Section 10 as given in 33 CFR Section 329 extends to the line on the shore reached by the plane of the mean high water level.

McAteer-Petris Act

The San Francisco Bay Conservation and Development Commission (BCDC) has regulatory jurisdiction, as defined by the McAteer-Petris Act, over the Bay and its shoreline, which generally consists of the area between the Bay shoreline and a line 100 feet landward of and parallel to the shoreline. As defined in Section 66610 of Chapter 2 in the Public Resources Code, a summary of BCDC jurisdiction includes (a) San Francisco Bay; (b) a shoreline band; (c) salt ponds; (d) managed wetlands; and (e) certain waterways. Within the Study Area, BCDC has two areas of jurisdiction: the San Francisco Bay and the shoreline band.

The limits of BCDC jurisdiction under the McAteer-Petris Act as given in PRC Section 66610 are as follows: (a) *San Francisco Bay:* five feet above mean sea level (MSL); (b) *Shoreline Band:* a 100- foot wide band extending landward of and parallel to the Bay shoreline as determined in (a) above.

2.0 METHODS

Prior to conducting field surveys, available reference materials were reviewed, including the Soil Survey of Alameda County, Western Part (USDA 1981), the San Leandro USGS 7.5' quadrangle, and available aerial photos of the site. A focused evaluation of indicators of wetlands and waters was performed in the Study Area on April 29, 2004. The methods used in this study to delineate jurisdictional wetlands and waters are based on the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987). The routine method for wetland delineation described in the Corps Manual was used to identify areas potentially subject to Corps Section 404 jurisdiction within the Study Area. A general description of the Study Area, including plant communities present, topography, and land use was also generated during the delineation visit. The methods for evaluating the presence of wetlands and waters employed during the site visit are described in detail below.

2.1 Potential Section 404 Wetlands

Section 328.3 of the Federal Code of Regulations defines wetlands as:

> *"Those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas."
(EPA, 40 CFR 230.3 and CE, 33 CFR 328.3)

The delineation studies determined the presence or absence of wetland indicators used by the U.S. Army Corps of Engineers in making a jurisdictional determination. The three criteria used to delineate wetlands are the presence of: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Corps Manual:

"....[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

Once an area was determined to be a potential jurisdictional wetland, its boundaries were delineated using advanced GPS equipment and mapped on a topographic map overlay on an aerial photograph. The areas of potential jurisdictional wetlands were measured digitally using ArcGIS software. Indicators described in the Corps Manual that were used to make wetland determinations at each sample point in the Study Area are summarized below.

Vegetation

Plant species identified on the project site were assigned a wetland status according to the U.S. Fish and Wildlife Service list of plant species that occur in wetlands (Reed 1988). This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

OBL	Always found in wetlands	>99% frequency
FACW(±)	Usually found in wetlands	67-99%
FAC	Equal in wetland or non-wetlands	34-66%
FACU	Usually found in non-wetlands	1-33%
NL	Not listed (upland)	<1%

Plants with OBL, FACW, and FAC classifications are classified as hydrophytic vegetation in the Corps Manual (1987) methodology. If more than 50 percent of the dominant plant species (in order for a plant to be considered dominant it must cover ≥20 percent of the total vegetative cover in the sample plot) are hydrophytic, the area is considered to have met the wetland vegetation criterion.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (minimum of 18 consecutive days in the San Francisco Bay Area). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, drift lines, and surface sediment deposits (including algal mats), or indirect indicators (secondary indicators), such as oxidized root channels and the FAC-neutral test. If indirect or secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology. Only primary hydrology indicators were used to determine if areas surrounding each sample point in the Study Area satisfied the Corps hydrology criterion.

Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as:

> *"A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part."*
>
> (Federal Register July 13, 1994, US Department of Agriculture, Natural Resource Conservation Service.)

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils generally have a characteristic low chroma matrix color, designated 0, 1, or 2, used to identify them as hydric. Chroma designations are determined by comparing a soil sample with a standard Munsell soil color chart (GretagMacbeth 2000). Soils with a chroma of 0 or 1 are considered hydric; soils with a chroma of 2 must also have mottles to be considered hydric. As outlined in the Corps Manual, soils do not need to be examined when both obligate vegetation and wetland hydrology are present at sample points. If both other criteria are directly observed, hydric soils may be assumed to be present.

2.2 Potential Section 404 Waters

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are also subject to Section 404 jurisdiction. In the San Francisco Bay Region, these "waters" can include intermittent and ephemeral streams, as well as lakes, rivers, and tidal waters.

Jurisdiction in tidal areas extends to the high tide line (HTL), which is defined as:

> *...the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.*
>
> Federal Register Vol. 51, No. 219, Part 328.3 (d). November 13, 1986.

Tidal waters present in the Study Area were noted and the elevation of the HTL applicable to the Study Area was calculated based on data provided by the National Oceanic and Atomospheric Administration (NOAA).

Corps jurisdiction in non-tidal areas extends to the ordinary high water mark (OHW), which is defined as:

> *...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*
>
> Federal Register Vol. 51, No. 219,
> Part 328.3 (e). November 13, 1986.

2.3 Areas Exempt from Section 404 Jurisdiction

Some areas that meet the technical criteria for wetlands or waters may not be jurisdictional under the Clean Water Act. Included in this category are some man-induced wetlands, which are areas that have developed at least some characteristics of naturally occurring wetlands due to either intentional or incidental human activities. Examples of man-induced wetlands include, but are not limited to, irrigated wetlands, impoundments, or drainage ditches excavated in uplands, wetlands resulting from filling of formerly deep water habitats, dredged material disposal areas, wetlands resulting from stream channel realignment, and wastewater treatment ponds.

In addition, some isolated wetlands and waters may also be considered outside of Corps jurisdiction as a result of the Supreme Court's decision in *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers* (531 U.S. 159 (2001)). Isolated wetlands and waters are those areas that do not have a surface or groundwater connection to, and are not adjacent to a navigable "Waters of the U.S.", and do not otherwise exhibit an interstate commerce connection. Areas suspected of being exempt were identified on the site (see Section 4.0 Results).

2.4 Section 10 Navigable Waters

Section 10 of the Rivers and Harbors Act (1899) applies to tidal areas below mean high water (MHW) and includes tidal areas currently subject to tidal influence, as well as historic tidal areas currently behind levees that historically were below MHW. The elevation of MHW within the Study Area was determined from NOAA tidal datums.

2.5 BCDC Jurisdiction

BCDC San Francisco Bay jurisdiction under the McAteer-Petris Act extends to five feet above mean sea level (MSL). The elevation of MSL within the Study Area was determined from NOAA tidal datums. The shoreline band would extend 100 feet landward of BCDC Bay jurisdiction.

3.0 STUDY AREA DESCRIPTION

The Study Area consists of a portion of a remnant tidal slough (Oyster Bay Slough), constructed levees, and gravel maintenance roads. The existing slough is a shallow, 350-foot wide remnant of Oyster Bay, created when the historic bay was filled to the south by creation of a landfill and to the north by construction of the Oakland Airport and the City of San Leandro wastewater treatment facility. In the vicinity of the proposed bridge crossing, both levee banks are lined with large (one to two-foot diameter) rip-rap in the upper intertidal zone with some larger concrete debris on the north levee. The mudflats appear to be at an elevation between mean tide level and mean high water with a single, central channel approximately three to five feet wide. The proposed new bike path extension follows a portion of wastewater treatment facility levee between the end of an existing bike path segment along the airport property and the north foot of the proposed bridge. This portion of the levee separates the treatment pond from a seasonal brackish marsh located on the adjacent airport property (described below). Site elevations range from approximately 5 to 20 feet NAVD.

The areas adjacent to the Study Area on the north side of the slough include lands owned by the City of San Leandro, which consist of gravel roads and a wastewater treatment pond with standing, brackish water, and Oakland Airport property, which contains a seasonal brackish marsh dominated by a dense pickleweed cover. The airport marshland is likely a remnant of the historic bay or of a previous tidal marsh. The East Bay Regional Park District, Oyster Bay Shoreline Park, and the remaining active landfill facility are adjacent to the Study Area on the south levee. Oyster Bay connects with south San Francisco Bay to the west.

Vegetation

Within the Study Area, plant communities consist of sparse tidal marsh vegetation in the intertidal zone and non-native grassland with coyote brush on upland levees. Non-native cord grass (*Spartina alterniflora*) has colonized the mudflats along the north levee to the east in a band of decreasing width from approximately 15 to 10 feet in the area of the proposed bridge crossing. There is a single small cordgrass patch along the south levee, which is not within the bridge crossing footprint. Scattered tidal marsh plants, primarily pickleweed (*Salicornia virginica*), have become established in the spaces between the rip-rap; however, the banks are largely unvegetated (see photographs in Appendix B).

The levee uplands within the Study Area are vegetated by non-native annual grasses such as rip-gut brome (*Bromus diandrus*) and slender wild oats (*Avena barbata*), with scattered to dense stands of coyote brush (*Baccharis pilularis*). Non-native herbs such as fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), and wild radish (*Raphanus sativus*) are also common. Several large patches of pampas grass (*Cortaderia selloana*) are present and a portion of the levee bank bordering the airport is vegetated by iceplant (*Carpobrotus* sp.).

Hydrology

The principal natural hydrological sources for the Study Area are tidal inundation (on Oyster Bay levee banks) and precipitation (on levee uplands and internal levee banks).

Soils

With the exception of mudflat sediments within the slough channel, all soils within the Study Area are composed of imported fill materials; no native soils are present on levee banks or created uplands.

The Alameda County Soil Survey (USDA 1981) indicates that the Study Area has two mapped soil types: 156-Xeropsamments, fill and 146-urban land. Xeropsamments are described as being composed of sandy fill material dredged from old beach areas; these soils are mapped on the north side of the slough channel. Urban land is described as being composed of heterogeneous fill covered by buildings, roads, parking lots and other urban structures; these soils are mapped on the south side of the slough channel.

4.0 RESULTS

Data on vegetation and hydrology were collected during the delineation site visit, however, no sample pits were examined as boundaries were based on calculated tidal datums, observed inundation, and abrupt vegetation lines. Potential jurisdictional areas are described in the following sections and shown on the enclosed map in Appendix A. Representative site photographs are shown in Appendix B. A list of plant species observed during the site visit is included in Appendix C. Potential jurisdictional areas found in the Study Area are discussed below.

4.1 Potential Section 404 Wetlands

Approximately 0.05 acre of tidal salt marsh occurs within the Study Area on the north levee bank. Low marsh (cordgrass) occupies about 0.04 acre and middle marsh (pickleweed) occupies about 0.02 acre within the Study Area (Appendix A). Within the proposed bridge footprint, approximately 140 square feet of low marsh (cordgrass) and approximately 10 square feet of mid marsh (pickleweed) occur (less than 0.01 acre of vegetation within the bridge footprint) Additional salt marsh vegetation extends along the north levee beyond the Study Area boundary. Non-tidal salt marsh, vegetated by pickleweed, also occurs to the north of the Study Area (Appendix A). Wetland areas were delineated based on the presence of wetland vegetation (pickleweed and cordgrass, both OBL wetland species) and hydrology indicators (inundation, calculated tide lines), since the native soils have been altered by the placement of fill (riprap, levee fill material).

4.2 Potential Section 404 Waters

No jurisdictional non-tidal waters occur within the Study Area. The City of San Leandro wastewater treatment pond located adjacent to the Study Area (Appendix A) would not be considered jurisdictional, as waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act, are not considered waters of the United States (33 CFR 328.3(a)(7)).

The determination of jurisdictional tidal waters was based on calculated tidal elevations. Under Section 404 of the Clean Water Act, Corps jurisdiction in the slough channel extends to the high tide line, calculated as +8.18 feet NAVD (Appendix D) from NOAA tidal datums.

4.3 Section 10 Navigable Waters

Under Section 10 of the 1899 Rivers and Harbors Act, Corps jurisdiction in the slough channel extends to mean high water level, given as +6.18 feet NAVD (Appendix D) at the San Leandro Marina tidal datum station (NOAA).

4.4 BCDC Jurisdictional Areas

Under the McAteer-Petris Act, BCDC jurisdiction in tidal waters of San Francisco Bay extends to five feet above mean sea level. MSL is given as +3.31 feet NAVD (Appendix D) at the San Leandro Marina tidal datum station (NOAA); therefore, BCDC jurisdiction in the slough extends to +8.31 feet NAVD. BCDC jurisdiction also includes a 100-foot shoreline band that extends 100 feet landward from the bay shoreline.

5.0 REFERENCES

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.

Federal Register. November 13, 1986. Department of Defense, Corps of Engineers, Department of the Army, 33 CFR Parts 320 through 330, Regulatory Programs of the Corps of Engineers; Final Rule. Vol. 51, No. 219; page 41217.

Kollmorgen Instruments Corporation. 1990. Munsell Soil Color Charts.

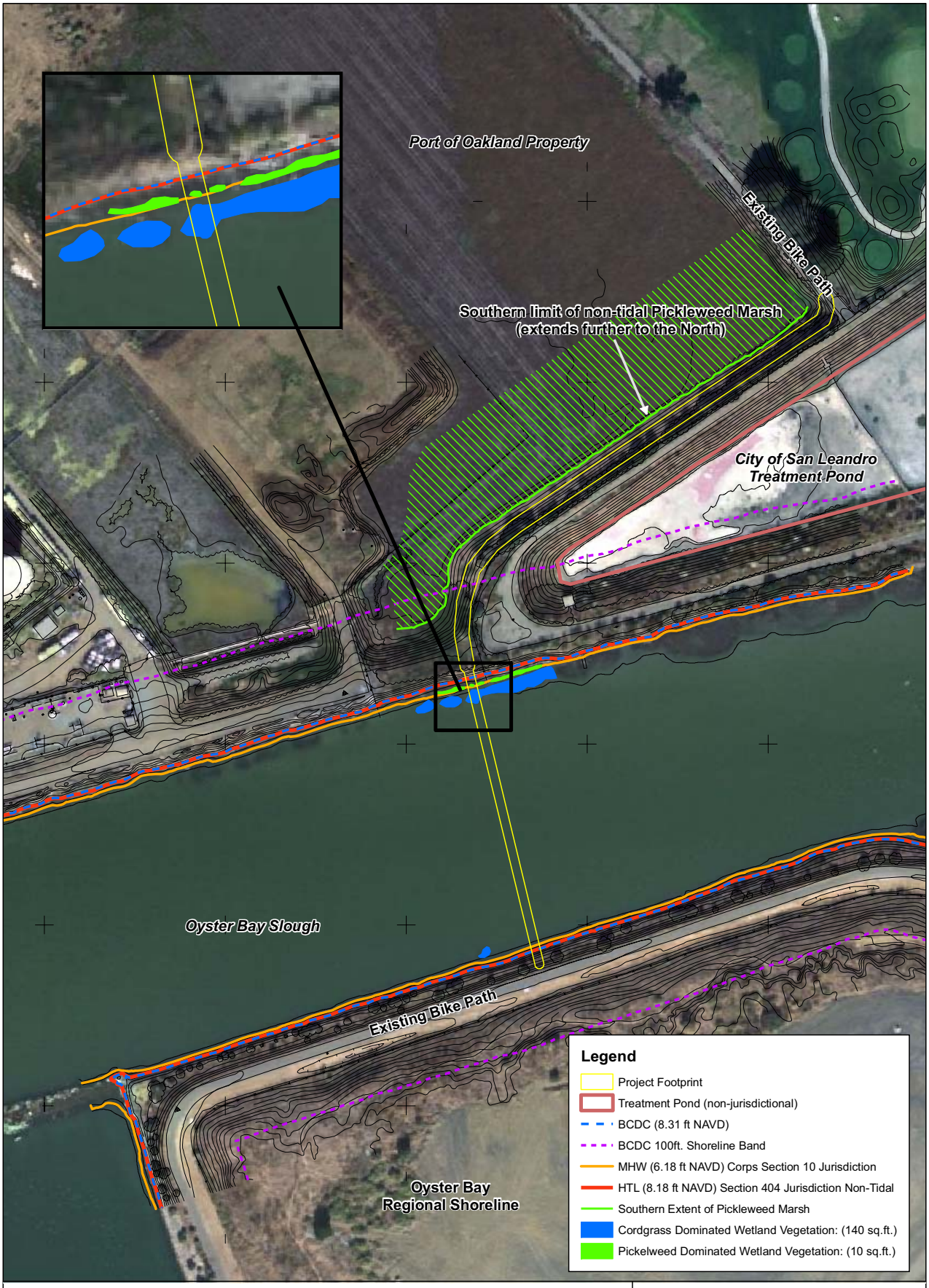
Reed, P. B., Jr. 1988. National list of plant species that occur in wetlands: California (Region 0). U.S. Fish and Wildlife Service Biological Report 88 (26.10).

Sawyer, J. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society, Sacramento, California.

U.S. Geological Survey. 1980. San Leandro quadrangle. 7.5 minute topographic map.

U.S. Department of Agriculture, Soil Conservation Service. 1981. Soil Survey of Alameda County, California, Western Part. In cooperation with the University of California Agricultural Experiment Station.

Appendix A - Jurisdictional Wetlands Map



Appendix A. Potential Jurisdictional Features

Within the Oyster Bay Bridge Project Footprint

N

Oyster Bay Bridge at
Oyster Bay Slough
San Leandro, California

0 50 100 200 Feet

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ENVIRONMENTAL CONSULTANTS

Date: January 2008
Aerial Image: TerraServer, 2004
Map By: Sundaran Gillespie
Filepath: L:\Acad 2000Files\13000\13056\GIS\Arcmap\Figure 4.mxd

Appendix B - Representative Site Photographs

Appendix B. Representative Site Photographs
Top: Smooth cordgrass has colonized portions of Oyster Bay Slough adjacent to the north levee. Photo shows approximate area to be shaded.
Bottom: North levee viewed from south levee at low tide. The bridge crossing is located to the left of the chain link fence.
Photos taken April 29, 2004

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Appendix B. Representative Site Photographs
Top: Stakes mark approximate extent of bridge footprint and wetland vegetation to be shaded on north levee.
Bottom: Looking east from approximate location of north levee bridge abutment. Stakes mark extent of bridge footprint.

Photos taken April 29, 2004

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Appendix B. Representative Site Photographs
Top: Photo taken from location of south levee bridge abutment site looking north. Stakes mark approximate extent of bridge footprint.
Bottom: Photo taken from south levee abutment site, looking west. Stake marks extent of bridge footprint.
Photos taken January 2008

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Appendix B. Representative Site Photographs
Top: Photo taken from south levee bridge abutment site, looking east.
Bottom: Photo taken from approximate extent of levee-top Bay Trail, looking west. Non-tidal salt marsh is present, north of the trail footprint.

Photos taken January 2008

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Appendix C - List of Observed Plant Species

Appendix C. Plant species observed in the Study Area during site assessments on April 29, 2004 and January 8, 2008.

Common Name	***Scientific Name***	**Status** *
slender wild oats	*Avena barbata*	NN
coyote brush	*Baccharis pilularis*	Native
black mustard	*Brassica nigra*	Cal-IPC List B
rip-gut brome	*Bromus diandrus*	NN
Italian thistle	*Carduus pycnocephalus*	Cal-IPC List B
iceplant	*Carpobrotus* sp.	Cal-IPC List A-1
pampas grass	*Cortaderia selloana*	Cal-IPC List A-1
fennel	*Foeniculum vulgare*	Cal-IPC List A-1
toyon	*Heteromeles arbutifolia*	Native
wild radish	*Raphanus sativus*	NN
pickleweed	*Salicornia virginica*	Native
smooth cordgrass	*Spartina alterniflora*	Cal-IPC List A-2

* Key to Status Codes

Native	Species native to California
NN	Species not native to California
Cal-IPC List A-1	Non-native species listed by the California Invasive Plant Council as “Most Invasive Wildland Pest Plant, Widespread”
Cal-IPC List A-2	Non-native species listed by the California Invasive Plant Council as “Most Invasive Wildland Pest Plants, Regional”
Cal-IPC List B	Non-native species listed by the California Invasive Plant Council as “Wildland Pest Plants of Lesser Invasiveness”

Appendix D - Calculated Tidal Datums

Appendix D. Tidal benchmarks of San Leandro Marina (Station ID 9414688) for the Oyster Bay Bridge at Oyster Bay Slough.

Table D-1. Calculations for Corps Jurisdictional High Tide Line (HTL) for the Bay Trail Bridge at Oyster Bay Slough using calculated data for the San Leandro Marina tide station.

- HTL at Presidio (San Francisco, San Francisco Bay tide station, ID 9414290)
  = 7.2 feet MLLW *

- MHHW at Presidio (San Francisco, San Francisco Bay tide station, ID 9414290)
  = 5.84 feet MLLW

- **High tide correction for San Leandro Marina tide station**
  = MHHW at San Leandro Marina - MHHW at Presidio
  = 7.43 feet MLLW - 5.84 feet MLLW
  = 1.59 feet MLLW

- **Calculated High Tide Line at San Leandro Marina in MLLW**
  = HTL at Presidio + High tide correction for San Leandro Marina
  = 7.2 feet MLLW + 1.59 ft MLLW
  = 8.79 feet MLLW

- 0 feet NAVD 88 = 0.61 feet MLLW at San Leandro Marina

- **Calculated High Tide line at San Leandro Marina in NAVD 88**
  = HTL at San Leandro Marina in MLLW - Difference between NAVD 88 and MLLW datums at San Leandro Marina
  = 8.18 feet NAVD 88

* Value determined by the Corps.

Appendix D. Tidal benchmarks of San Leandro Marina (Station ID 9414688) for the Bay Trail Bridge at Oyster Bay Slough.

Table D-2. Elevations of tidal datums converted to feet NAVD 88 for the Bay Trail Bridge at Oyster Bay Slough.

Elevations of tidal datums at San Leandro Marina referred to MLLW in meters:

Mean Higher High Water (MHHW)	= 2.264 m
Mean High Water (MHW)	= 2.069 m
Mean Tide Level (MTL)	= 1.212 m
Mean Sea Level (MSL)	= 1.194 m
Mean Low Water (MLW)	= 0.355 m
North American Vertical Datum-1988 (NAVD 88)	= 0.187 m
Mean Lower Low Water (MLLW)	= 0.000 m

Elevations of tidal datums at San Leandro Marina referred to MLLW in feet:

Mean Higher High Water (MHHW)	= 7.43 ft
Mean High Water (MHW)	= 6.79 ft
Mean Tide Level (MTL)	= 3.98 ft
Mean Sea Level (MSL)	= 3.92 ft
Mean Low Water (MLW)	= 1.16 ft
North American Vertical Datum-1988 (NAVD 88)	= 0.61 ft
Mean Lower Low Water (MLLW)	= 0.00 ft

Elevations of tidal datums at San Leandro Marina referred to NAVD 88 in feet:

Mean Higher High Water (MHHW)	= 6.82 ft
Mean High Water (MHW)	= 6.18 ft
Mean Tide Level (MTL)	= 3.37 ft
Mean Sea Level (MSL)	= 3.31 ft
Mean Low Water (MLW)	= 0.55 ft
North American Vertical Datum-1988 (NAVD 88)	= 0.00 ft
Mean Lower Low Water (MLLW)	= -0.61 ft

Appendix D Summary of Coordination With Agencies

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
333 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94105-2197

Regulatory Branch

MAY 21 2004

RECEIVED
JUN 0 3 2004
BASELINE

SUBJECT: File Number: 28803S

Mr. Brian Wiese
East Bay Regional Part District (EBRPD)
P.O. Box 5381
Oakland, California 94605-0381

Dear Mr. Wiese:

This letter is in response to receipt of your notice titled "Notice of Preparation of a Draft Environmental Assessment and Scoping Session" dated received May 14, 2004 concerning your proposed project to construct a pedestrian and bicycle bridge and paved trail. The bridge would span a shallow, manmade tidal slough (Oyster Bay Slough) that separated the regional park from the northern boundaries; the bridge plans have already received preliminary approval from the U.S. Coast Guard, based on design plans that show that the bridge will be constructed at an elevation three feet above the projected 100-year flood level of seven feet. The proposed project is located within the Oyster Bay Shoreline Park, bound to the north by Oakland International Airport and the City of San Leandro wastewater treatment facility levees and to the south by a landfill. Since this activity will involve impact to a water of the U.S., the Corps of Engineers will need to review those portions of your project.

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

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

Your proposed work is within our jurisdiction and a permit will be required. Application for Corps authorization should be made to this office using the application form in the enclosed pamphlet. To avoid delays it is essential that you enter the File Number at the top of this letter into Item No. 1. The application must include plans showing the location, extent and character of the proposed activity, prepared in accordance with the requirements contained in this pamphlet. You should note, in planning your work, that upon receipt of a properly completed application and plans, it may be necessary to advertise the proposed work by issuing a Public Notice for a period of 30 days.

If an individual permit is required, it will be necessary for you to demonstrate to the Corps that your proposed fill is necessary because there are no practicable alternatives, as outlined in the U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines. A copy is enclosed to aid you in preparation of this alternative analysis.

Should you have any questions regarding this matter, please contact Bob Quebedeaux of our Regulatory Branch at 415-977-8446 or bob.d.quebedeaux@spd02.usace.army.mil. Please address all correspondence to the Regulatory Branch and refer to the File Number at the head of this letter.

Sincerely,

Edward A. Wylie

Edward A. Wylie
Chief, South Section

Enclosures

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-04-SP-1794

MAY 18 2004

Mr. Brian Wiese
East Bay Regional Park District
P.O. Box 5381
Oakland, California 94605-0381

Subject: Species List for Oyster Bay Bridge, Alameda County, California

Dear Mr. Wiese:

We are sending the enclosed list (Enclosure A) in response to your May 12, 2004, notice. The list covers the following U.S. Geological Survey 7½ minute quad or quads: San Leandro Quad.

Please read *Important Information About Your Species List* (enclosed). It explains how we made the list and describes your responsibilities under the Endangered Species Act. Please contact Dan Buford at (916) 414-6625, if you have any questions about the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of Species Lists at this address. You may fax requests to 414-6712 or 414-6713. You may also email them to harry_mossman@fws.gov.

Sincerely,

for

Catrina Martin
Deputy Assistant Field Supervisor

Enclosures

TAKE PRIDE IN AMERICA

Letter #1

State of California – The Resources Agency
ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

November 10, 2005

East Bay Regional Park District
Planning/Stewardship Department
2950 Peralta Oaks Court
Oakland, CA 94605

Dear Sir or Madam:

Bay Trail Bridge at Oyster Bay Slough
San Leandro, Alameda County

The Department of Fish and Game (DFG) has reviewed the document for the subject project. Please be advised this project may result in changes to fish and wildlife resources as described in the California Code of Regulations, Title 14, Section 753.5(d)(1)(A)-(G)[1]. Therefore, if you are preparing an Environmental Impact Report or an Initial Study and Negative Declaration for this project, a de minimis determination is not appropriate, and an environmental filing fee as required under Fish and Game Code Section 711.4(d) should be paid to the Alameda County Clerk on or before filing of the Notice of Determination for this project. #1-1

A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats, should be provided. Rare, threatened and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, Section 15380). The assessment should identify any rare plants and rare natural communities, following DFG's Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (revised May 8, 2000). The Guidelines are available at www.dfg.ca.gov/whdab/pdfs/guideplt.pdf #1-2

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of SAAs is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the our #1-3

[1] http://ccr.oal.ca.gov/. Find California Code of Regulations, Title 14 Natural Resources, Division 1, Section 753

agreement. To obtain information about the SAA notification process, please access website at www.dfg.ca.gov/1600; or to request a notification package, contact the Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Mr. John Krause, Associate Wildlife Biologist, at (415) 454-8050; or Mr. Scott Wilson, Habitat Conservation Supervisor, at (707) 944-5584.

Sincerely,

Cindy Catalano

Robert W. Floerke
Regional Manager
Central Coast Region

Letter #2

PORT OF OAKLAND

November 14, 2005

Mr. Brian Wiese
Chief
East Bay Regional Park District
Planning/Stewardship Department
2950 Peralta Oaks Court
Oakland, CA 94605

RE: Port of Oakland Comments on the Bay Trail Bridge at Oyster Bay Slough Initial Study/Mitigated Negative Declaration (IS/MND)

Dear Mr. Wiese,

Thank you for the opportunity to comment on the Bay Trail Bridge at Oyster Bay Slough Initial Study/Mitigated Negative Declaration. The Port supports the implementation of Alternative #2, the most feasible alternative to making this vital Bay Trail connection. The Port has the following comments on the Initial Study:

General Comments

Pursuant to California Environmental Quality Act Section 21002, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would lessen the significant environmental effects of such projects."

An overall comment on this IS/MND relates to the Bay Trail Connection "Preferred Alternative" Alternative #1 Retaining Structure. This alternative involves pile driving, filling of wetlands, construction of a retaining wall and construction of a new trail and would cause significant effects in air quality, biological resources, geology and soils, and land use and planning. Whereas, "Alternative #2 Mixed Use Trail/Road" which would place the trail on the existing maintenance road, and involve no sheet piling, no filling on the levee slope and no retaining wall, is a feasible alternative that accomplishes all of the project's objectives with less potential for significant environmental impacts. This Alternative #2 would avoid potential disturbance of the adjacent salt marsh and present less impacts to air quality, biological resources, geology and soils, and land use/planning. Under CEQA, the project sponsor is obligated to select Alternative #2 if the alternative accomplishes all the project objectives (see page 1) with less potential significant impact. #2-1

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530 Water Street ■ Jack London Square ■ P.O. Box 2064 ■ Oakland, California 94604–2064
Telephone: (510) 627-1100 ■ Facsimile: (510) 627-1826 ■ Web Page: *www.portofoakland.com*

The mitigation measures proposed by the project sponsor are inadequate to avoid or lessen the potentially significant impact that would result from Alternative #1. A particularly glaring inadequacy is the absence of any proposed maintenance of the proposed trail and retaining wall. Alternative #1 consists of filling in a sloping area to create a walled foundation for the new trail supported by a wooden retaining wall, immediately adjacent to a high-quality wetland salt marsh habitat. Such structure is subject to deterioration of the retaining wall, erosion and eventual spillage of fill materials and runoff from the trail onto the wetland area. The lack of buffer zone between the trail and the wetlands makes such erosive effects more likely. Yet, the IS/MND does not propose any continuing maintenance by a responsible agency of the retaining wall or of the trail. The cumulative impact of expected erosion, deterioration of the retaining wall, the use of the trail by increasing number of visitors and the sanitary district maintenance vehicles will likely degrade the surrounding environment. #2-2

Currently, Alternative #1 is not feasible since the project sponsor does not have control over property on which the alternative is proposed. Until such time the project sponsor has negotiated an agreement and obtained a building permit from the land owner (the "Port of Oakland"), Alternative #1 is not a feasible alternative from a land use/planning perspective.

The Port has the following comments on the particular sections of the IS/MND:

Page 1: Summary of Project:

A description of land-use jurisdiction in which Project is proposed to be located is inadequate. #2-3

A summary description of wetland and habitat in more detail where Bay Trail Connection is proposed is needed. #2-4

Page 9: Bay Trail Connection Alternatives:

Alternative #1 is infeasible since the project sponsor does not control or have an agreement with land owner (the Port of Oakland) related to use of the land on which this alternative is proposed. The alternative is also too costly. Moreover, Alternative #1 does not meet project goal of "minimize environmental impact." Alternative #2 has the least environmental impacts. #2-5

Alternative #1 should be withdrawn unless project sponsor can demonstrate feasibility in that (1) it has control over land needed, (2) it is cost-effective compared to Alternative #2, and (3) it would minimize environmental impacts compared to Alternative #2. #2-6

Page 9: Alternatives Considered and Withdrawn

Alternative #3 should not be withdrawn because it is a feasible alternative in that (1) project sponsor has control over land needed, (2) it requires a minimum of fill and (3) it meets all project goals. #2-7

Page 13: Anticipated Permits and Funding

If the project sponsor pursues Alternative #1, the Project Sponsor would also need a building permit from the Port of Oakland, which is a discretionary permit subject to Federal Aviation Administration restrictions and CEQA. Filling, retaining wall construction, pile driving and trails surfacing would be considered activities subject to Port permit requirements. #2-8

Page 15: Anticipated Permits and Funding

Please discuss the respective estimated costs of Bay Trail Connection alternatives, including a cost comparison between Alternative #1 and Alternative #2. Please provide a justification for choosing Alternative #1 as the preferred alternative given that the costs of the other alternatives which are all much cheaper to design, construct and maintain. #2-9

Page 20-28: Biological Resources

Under Items IV (a) and (c), Alternative #1 would cause potentially Significant Impact". Alternative #1causes significant impacts because pile driving, filling of wetlands and installation of retaining wall would (1) have substantial adverse effect through habitat modification on species identified as a candidate, sensitive or special status species and (2) have substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal and filling. Without maintenance controls this alternative could negatively impact the adjacent salt marsh wetland habitat. Alternative #1 should not be the preferred alternative since there is an Alternative (Alternative #2 using the existing maintenance road) that has less over all impacts to resources and reduces/avoids all potential disturbance to the adjacent salt marsh habitat by constructing the trail on existing maintenance road. With Alternative #2, the well developed vegetation on the existing levee slope would provide an additional buffer of protection for the adjacent alt marsh. #2-10

Page 26: Burrowing Owl

The issue of whether the bike path is constructed on top of the levee or on pile supported fill is irrelevant to the impact analysis for burrowing owls. In either case, the existing levee will part of the active construction area, and therefore, a preconstruction survey for burrowing owls should be performed. Additional mitigation measures should also be included to avoid impacts to these owls and their nests. #2-11

Page 27: Mitigation Measure IV-2
This mitigation is inadequate. Specific erosion control measures, performance criteria and implementation schedule and roles should be discussed. #2-12

Page 27: Mitigation Measure IV-3 (c)
This mitigation measure is inadequate. Avoidance of shrub habitat will not be feasible during trail construction. Construction should not be permitted during breeding season as it will be impossible to protect nests from the construction zone. Construction will occur within 50 feet of breeding habitat. #2-13

Page 31: Geology and Soil
Under Item VI (b), Alternative #1 would cause substantial soil erosion by attempting to fill into sloping areas adjacent to salt marsh wetland habitat and retaining fill materials by wooden retaining wall. The preparation of Storm Water Pollution Prevention Plan, without continuous monitoring and commitment of sponsoring agency for long-term maintenance of the retaining wall, is inadequate to prevent deterioration of the retaining wall. In addition, long term maintenance of the trail would be necessary to reducecontaminated runoff, including potential pollutants emitted by sanitary district maintenance vehicles. #2-14

Page 34: Mitigation Measure VII-1.
Include Personal Protective Equipment in Health and Safety Plan. Include OSHA standards and protection performance criteria. #2-15

Page 34: Mitigation Measure VII-2.
Mitigation Measure is inadequate. Specify what measures shall be taken, by whom, when, how, and where and discuss performance criteria. #2-16

Page 35-36: There is a redundant set of paragraphs. #2-17

Page 37: There is no discussion of the impacts associated with checklist item VIII (b). #2-18

Page 39: Land Use and Planning
The Alternative #1 project is located on land owned by and within the land-use jurisdiction of the Port of Oakland. The subject area is within an area designated as part of the Oakland Metropolitan International Airport. As such, the Port of Oakland exercises land-use planning subject to grant-assurances restrictions of the Federal Aviation Administration (the "FAA"). Moreover, pursuant to the City of Oakland Charter, any lease of or construction upon land within the jurisdiction of the Port of Oakland must be approved and permitted by the Board of Port Commissioners. The granting of a building permit under Oakland City Charter Section 708 is a discretionary action subject to the requirements of CEQA. #2-19

The Alternative #1 project is subject to FAA restrictions and the Port of Oakland grant of building permit or land control. The project sponsor has neither proposed to comply with FAA restrictions nor obtain land use permission or control from the Port of Oakland. To

the extent that the proposed Alternative #1 conflicts with the FAA or Port of Oakland restrictions for the purpose of the operating the Airport or with Port standards for the maintaining the wetlands, Alternative #1 causes an un-mitigated significant impact under CEQA. #2-19 cont.

Alternative #2 is not subject to Port of Oakland jurisdiction, and therefore has no land use impacts at this time.

Thank you for the opportunity to comment. Please call us if you have any questions at 510-627-1250.

Sincerely,

Lauren R. Eisele

Lauren Eisele
Associate Port Environmental Planner

Cc: Danny Wan (Port)
Anne Henny (Port)
Steve Grossman (Port)

86893.v1

Letter #3

November 14, 2005

East Bay Regional Park District
Planning/ Stewardship Department
2950 Peralta Oaks Court
Oakland, California 94605

SUBJECT: Bay Trail Bridge at Oyster Bay Slough Initial Study/
Mitigated Negative Declaration

Ladies and Gentlemen:

On October 11, 2005, San Francisco Bay Conservation and Development Commission (Commission) staff received the Initial Study/Mitigated Negative Declaration (IS/MND) for the Bay Trail Bridge at Oyster Bay Slough Project, located south of the Oakland International Airport, in the Cities of San Leandro and Oakland, Alameda County. The project would include a 350-foot-long pedestrian/bicycle bridge across Oyster Bay Slough and a 630-foot-long paved trail to connect the Oyster Bay Regional Shoreline with the Bay Trail to the north, adjacent to the Oakland Airport, on property owned by the Port of Oakland. The Commission staff has reviewed the IS/MND and is submitting its comments regarding the document. Although the Commission itself has not reviewed the IS/MND, the staff comments are based on the McAteer-Petris Act, the Commission' s San Francisco Bay Plan (Bay Plan), the Commission' s federally-approved management plan for the San Francisco Bay, and the federal Coastal Zone Management Act (CZMA).

Jurisdiction

The Commission's jurisdiction in this area includes all tidal areas of the Bay up to the line of mean high tide or the inland edge of wetland vegetation up to five feet above Mean Sea Level in marshlands, all areas formerly subject to tidal action that have been filled since September 17, 1965, and the " shoreline band," which extends 100 feet inland from and parallel to the Bay shoreline.

#3-1

Commission permits are required for construction, dredging, fill placement, and dredged material disposal within its area of jurisdiction. Permits are issued if the Commission finds the activities to be consistent with the McAteer-Petris Act and the policies and findings of the Bay Plan. In addition to any needed permits under its state authority, federal actions, permits, and grants that affect the Commission's jurisdiction are subject to consistency review by the Commission, pursuant to the federal Coastal Zone Management Act (CZMA),

for their consistency with the Commission's federally-approved management program for the Bay.

Pedestrian Bridge and Bay Fill

Among other requirements, Section 66605 of the McAteer-Petris Act requires that fill (i.e., solid, pile-supported, cantilevered, or floating fill) in the Commission's Bay jurisdiction should only be authorized when: (1) the public benefits from the fill clearly exceed public detriment from the loss of water areas; (2) the fill is limited to water-oriented uses or minor fill to improve shoreline appearance or public access; (3) there is no alternative upland location; (4) the fill is the minimum amount necessary; (5) the fill minimizes harmful effects to the bay, such as the reduction or impairment of the volume surface area or circulation of water, water quality, fertility of marshes or fish and wildlife resources; and (6) that the fill will, to the maximum extent feasible, establish a permanent shoreline.

The preferred bridge alternative would be approximately 348 feet long with a clear travel width of 10 feet and a railing height of 54 inches. Three piers consisting of four-foot-in-diameter, cast in steel concrete piles would support the preferred bridge structure. An alternative trestle bridge structure was analyzed that would be approximately the same width and height, but would require approximately 78 steel piles to be driven into the slough bottom. The preferred bridge alternative appears to require less fill in the Commission's Bay jurisdiction and thus could be authorized more easily by the Commission than the trestle bridge alternative. #3-2

To receive authorization for the proposed bridge the City of San Leandro would need to provide calculations of the Bay fill that would be required for both the preferred bridge alternative, and the alternative bridge designs that have been evaluated. In general, these calculations should include the square footage of the Bay the proposed bridge would cover, the volume in cubic yards of the proposed bridge pilings, the landing constructed for the bridge, and any Bay fill (temporary or permanent) that would be associated with the construction of the trail. In addition, please evaluate whether the proposed project, and the amount of Bay fill proposed, would be consistent with the Commission's laws and policies on fill. Please also include in your analysis consideration of why the proposed bridge design would involve the minimum fill necessary to meet the goals of the project. If the proposed fill would cover 10,000 square feet of fill or more, the project must be reviewed at a Commission public hearing and vote.

Preferred Bay Trail Alignment and Trail Alternatives

The preferred Bay Trail connection north of Oyster Bay Slough would be a 10-foot-wide, 630-foot-long trail with two-foot-wide shoulders. The trail would be constructed by widening the existing access road for the City of San Leandro's wastewater treatment ponds. This levee would be widened on its north side by installing a retaining structure and #3-3

backfilling the area with lightweight fill. The new trail would be fenced off from the existing maintenance road and wastewater treatment ponds. The IS/MND indicates that the retaining structure and fill would not be located in the Commission's Bay jurisdiction, nor placed in the adjacent marshland, which appears to be a diked wetland, but partially within the Commission' s 100-foot shoreline band jurisdiction. #3-3 cont.

The IS/MND states that the retaining structure required to construct the preferred trail alignment would not result in any environmental impacts. A mitigation measure is included in the IS/MND that would require the installation of a protective fence to prevent "...accidental intrusion by construction equipment and/or workers into the adjacent pickleweed marsh..." However, the IS/MND does not include an analysis of the potential impacts on the marsh habitat and associated species from pedestrian and bicycle use of the trail once constructed. Would a landscaped barrier be installed to ensure no intrusion into the marsh by trail users? In addition, would the trail be constructed at an elevation high enough to protect it from occasional flooding? Please also clarify that the marsh adjacent to the preferred trail alignment is a diked wetland.

The IS/MND also states that the preferred Bay Trail connection would be located on the Port of Oakland's prop erty. To obtain a BCDC permit for this project, the Port of Oakland would have to be a co-applicant for the permit or grant a long-term lease (i.e., at least 60 years) to the City of San Leandro. #3-4

Although Commission staff generally supports this preferred trail alignment, it continues to have a number of concerns. First, the preferred trail alignment appears to be the most expensive alternative, due to the need to widen an existing levee. The other trail alignments would be installed on existing levees that do not need to be widened. In addition, the property issue with the Port of Oakland must be resolved. If for some reason, the City of San Leandro is unable to obtain: (1) the Port of Oakland's pe rmission to construct this preferred trail alignment; and/or (2) the funds necessary to complete the proposed alignment, staff believes the other two Bay Trail connection alternatives may be feasible. The IS/MND outlines that the other two trail alignment alternatives considered would complicate maintenance of the City of San Leandro's w astewater treatment plant. Although this is a very valid concern, the complications do not appear to be insurmountable should the preferred trail alignment become infeasible. #3-5

Thank you for the opportunity to comment on this IS/MND. It is an exciting project that will provide a critical link in the Bay Trail in this area. Commission staff would like to support your efforts in any way possible. Please feel free to call me with any questions or concerns at 415/352-3618 or e-mail me at andreag@bcdc.ca.gov.

Sincerely,

ANDREA M. GAUT
Coastal Program Analyst

cc: City of San Leandro; Attn: Uche Udemezue, P.E.
Port of Oakland; Attn: Lauren Eisele
ABAG Bay Trail Project; Attn: Lee Huo

Appendix E USFWS Official Species List for the Project Action Area

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

March 26, 2008

Document Number: 080326011417

WRA, Inc
2169 East Francisco Blvd. Suite G
San Rafael, CA 94901

Subject: Species List for Oyster Bay Bridge at Oyster Bay Slough

Dear: Interested party

We are sending this official species list in response to your March 26, 2008 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

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

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

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 24, 2008.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division

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

Document Number: 080326012332

Database Last Updated: January 31, 2008

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Euphydryas editha bayensis
bay checkerspot butterfly (T)

Icaricia icarioides missionensis
mission blue butterfly (E)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Speyeria zerene myrtleae
Myrtle's silverspot butterfly (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
tidewater goby (E)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus kisutch
coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana aurora draytonii
California red-legged frog (T)

Critical habitat, California red-legged frog (X)

Reptiles

Caretta caretta
loggerhead turtle (T) (NMFS)

Chelonia mydas (incl. agassizi)
green turtle (T) (NMFS)

Dermochelys coriacea
leatherback turtle (E) (NMFS)

Lepidochelys olivacea
olive (=Pacific) ridley sea turtle (T) (NMFS)

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis sirtalis tetrataenia
San Francisco garter snake (E)

Birds

Brachyramphus marmoratus
marbled murrelet (T)

Charadrius alexandrinus nivosus
western snowy plover (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Eumetopias jubatus
Steller (=northern) sea-lion (T) (NMFS)

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Arctostaphylos pallida
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Cirsium fontinale var. fontinale
fountain thistle (E)

Clarkia franciscana
Presidio clarkia (E)

Eriophyllum latilobum
San Mateo woolly sunflower (E)

Hesperolinon congestum
Marin dwarf-flax (=western flax) (T)

Lasthenia conjugens
Contra Costa goldfields (E)

Quads Containing Listed, Proposed or Candidate Species:

HAYWARD (447A)

SAN LEANDRO (447B)

REDWOOD POINT (447C)
NEWARK (447D)
HUNTERS POINT (448A)
SAN MATEO (448D)
OAKLAND EAST (465C)
LAS TRAMPAS RIDGE (465D)
OAKLAND WEST (466D)

County Lists

Alameda County

Listed Species

Invertebrates

Branchinecta longiantenna
Critical habitat, longhorn fairy shrimp (X)
longhorn fairy shrimp (E)

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)

Euphydryas editha bayensis
bay checkerspot butterfly (T)

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
tidewater goby (E)

Hypomesus transpacificus
Critical habitat, delta smelt (X)

Oncorhynchus kisutch
coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

Rana aurora draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Amsinckia grandiflora
large-flowered fiddleneck (E)

Arctostaphylos pallida
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Clarkia franciscana
Presidio clarkia (E)

Cordylanthus palmatus
palmate-bracted bird's-beak (E)

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

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

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

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

Plants

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

Surveying

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

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

Your Responsibilities Under the Endangered Species Act

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

capture, or collect" any such animal.

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

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

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

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

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

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

Candidate Species

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

Species of Concern

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

Wetlands

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

this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 24, 2008.

Appendix F Calculated Tidal Datums at Oyster Bay Slough

Appendix F. Tidal benchmarks of San Leandro Marina (Station ID 9414688) for the Bay Trail Bridge at Oyster Bay Slough.

Table F-1. Calculations for Corps Jurisdictional High Tide Line (HTL) for the Bay Trail Bridge at Oyster Bay Slough using calculated data for the San Leandro Marina tide station.

- HTL at Presidio (San Francisco, San Francisco Bay tide station, ID 9414290)
  = 7.2 feet MLLW *

- MHHW at Presidio (San Francisco, San Francisco Bay tide station, ID 9414290)
  = 5.84 feet MLLW

- **High tide correction for San Leandro Marina tide station**
  = MHHW at San Leandro Marina - MHHW at Presidio
  = 7.43 feet MLLW - 5.84 feet MLLW
  = 1.59 feet MLLW

- **Calculated High Tide Line at San Leandro Marina in MLLW**
  = HTL at Presidio + High tide correction for San Leandro Marina
  = 7.2 feet MLLW + 1.59 ft MLLW
  = 8.79 feet MLLW

- 0 feet NAVD 88 = 0.61 feet MLLW at San Leandro Marina

- **Calculated High Tide line at San Leandro Marina in NAVD 88**
  = HTL at San Leandro Marina in MLLW - Difference between NAVD 88 and MLLW datums at San Leandro Marina
  = 8.18 feet NAVD 88

* Value determined by the Corps.

Appendix F. Tidal benchmarks of San Leandro Marina (Station ID 9414688) for the Bay Trail Bridge at Oyster Bay Slough.

Table F-2. Elevations of tidal datums converted to feet NAVD 88 for the Bay Trail Bridge at Oyster Bay Slough.

Elevations of tidal datums at San Leandro Marina referred to MLLW in meters:

Mean Higher High Water (MHHW)	= 2.264 m
Mean High Water (MHW)	= 2.069 m
Mean Tide Level (MTL)	= 1.212 m
Mean Sea Level (MSL)	= 1.194 m
Mean Low Water (MLW)	= 0.355 m
North American Vertical Datum-1988 (NAVD 88)	= 0.187 m
Mean Lower Low Water (MLLW)	= 0.000 m

Elevations of tidal datums at San Leandro Marina referred to MLLW in feet:

Mean Higher High Water (MHHW)	= 7.43 ft
Mean High Water (MHW)	= 6.79 ft
Mean Tide Level (MTL)	= 3.98 ft
Mean Sea Level (MSL)	= 3.92 ft
Mean Low Water (MLW)	= 1.16 ft
North American Vertical Datum-1988 (NAVD 88)	= 0.61 ft
Mean Lower Low Water (MLLW)	= 0.00 ft

Elevations of tidal datums at San Leandro Marina referred to NAVD 88 in feet:

Mean Higher High Water (MHHW)	= 6.82 ft
Mean High Water (MHW)	= 6.18 ft
Mean Tide Level (MTL)	= 3.37 ft
Mean Sea Level (MSL)	= 3.31 ft
Mean Low Water (MLW)	= 0.55 ft
North American Vertical Datum-1988 (NAVD 88)	= 0.00 ft
Mean Lower Low Water (MLLW)	= -0.61 ft