

**DEPARTMENT OF TRANSPORTATION**

DISTRICT 4  
111 GRAND AVENUE  
P.O. BOX 23660  
OAKLAND, CA 94623-0660  
PHONE (510) 622-0716  
FAX (510) 286-4563  
TTY 711  
www.dot.ca.gov



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a California Way of Life.*

January 25, 2018

EA 04-01358  
04-SF,Ala-80-8.65R/8.85R,0.0/0.8R  
Pier Retention Proposal: Pier E2

Mr. Bruce H. Wolfe  
Executive Officer  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, California 94612

Dear Mr. Wolfe,

This letter describes a proposal by the California Department of Transportation (Department) for the San Francisco Oakland Bay Bridge (SFOBB) East Span Seismic Safety Project (SFOBB Project) to retain Pier E2 of the SFOBB original east span for public access and shoreline observation.

The Department is requesting a minor modification to the project description of the SFOBB Project's Waste Discharge Requirements (WDR), or concurrence that the Pier E2 retention proposal is covered by existing authorization. The Department believes that the proposal directly benefits the public by providing new public access to the San Francisco Bay (Bay) shoreline.

**SFOBB Project Status and Pier E2 Retention**

The San Francisco Bay Regional Water Quality Control Board (Water Board) issued WDR on January 30, 2002 to the Department for the SFOBB Project. The WDR covered construction of the new SFOBB East Span, which is complete, and demolition of the original East Span, which is nearing completion. Pier E2, Pier E19, Pier E20, Pier E21, Pier E22, and Pier E23 of the SFOBB original east span currently remain, all other SFOBB original east span marine foundations (Pier E3 to Pier E18) were removed by the Department. Pier E23 is located on the Oakland shoreline while the other five remaining piers are located within the waters of the Bay.

This letter contains a proposal to beneficially reuse portions of Pier E2. The Department plans to retain some of the existing Pier E2 structure to support a publicly accessible observation area at the Bay shoreline.

Plans for Piers E19 to E23 are currently under consideration by the Department and will be addressed in a separate letter once a final plan for those piers is determined.

The SFOBB Project is statutorily exempt from the California Environmental Quality Act (CEQA) as indicated in Streets and Highways Code, Section 182.2. That section, enacted by Assembly Bill 144 (2005), provides that toll bridge seismic retrofit and replacement projects described in Section 188.5 (including the SFOBB Project) shall continue to be governed by the provisions of former Article 4.9. Article 4.9, added by Chapter 15 in 1994 and subsequently amended (except former Section 180.7), included Streets and Highways Code, Section 180.2, where the CEQA exemption originally was set forth.

### **Pier E2 Retention: Site and Structure Description**

Pier E2 would be repurposed by constructing a new observation area on the pier, a connecting pedestrian bridge and new access features on Yerba Buena Island (YBI).

#### Pier E2 Site Location

Pier E2 is located adjacent to YBI in the City and County of San Francisco (CCSF), approximately 100 feet to the east side of YBI, and is situated south of the SFOBB new east span bridge at a latitude/longitude of approximately 37.814277°/-122.358574° (Figure 1).

#### Pier E2 Existing Structure

Pier E2 is a large, reinforced concrete cellular structure, resting on an unreinforced concrete seal course with an average thickness of about 35 feet, which is placed on rock. The dimensions of the seal course are approximately 122 feet by 43 feet and the cellular structure of the pier is 121 feet by 41 feet. The reinforced concrete walls within Pier E2 range from 3 to 4 feet in thickness. Figure 2 shows the current condition of Pier E2 in the Bay. The hollow chambers of Pier E2 contain water that exchanges with the bay through weep holes in the foundation located at an approximate elevation of -2 feet (1929 National Geodetic Vertical Datum [NGVD29]). The mudline elevation around Pier E2 ranges from approximately -10 feet to -30 feet NGVD29 on the west face and approximately -30 feet to -40 feet NGVD29 on the east face.

### **Proposed Project: Pier E2 Observation Area**

#### Overview

The Department would construct a pedestrian bridge and observation area utilizing the existing Pier E2 marine foundation as an anchor for the proposed public access facility. In addition to the bridge and Pier E2 observation area, construction of access walkways, a parking area and upgraded road to the facility on YBI would be provided. All public access facilities would be designed to meet current state guidance for sea level rise to end-of-century projections. The construction of facilities at Pier E2 would require mechanical removal of some portion of the pedestals and pier slabs to reduce the elevation of the structure, as required by the design.

#### YBI Observation Area

The pedestrian bridge to Pier E2 from YBI would be comprised of multiple precast, prestressed concrete box girders with approximate dimensions that include a length of 120 feet and a width of 19 feet to create a pedestrian walkway 15 feet in width between the pedestrian railings. The

area of the bridge, including abutment outline, would be approximately 2,300 square feet (sq. ft.). The bridge would be seated on the east end of the modified Pier E2 structure and on a reinforced concrete abutment that would be constructed on YBI. On top of Pier E2, a reinforced concrete slab approximately 43 feet by 122 feet would be constructed to serve as an observation platform. Railings would be installed around the exterior of the platform. Lighting would be provided by incorporating the lighting in the railing, or by utilizing luminaires on the bridge approaches and observation platform.

At grade at the YBI shoreline, the abutment for the pedestrian bridge would be seated on approximately 22 steel H-piles that would be driven on-land to their design tip elevation with a mechanical hammer. A cast-in-place concrete abutment would be poured on top of these piles. The abutment would be approximately 29 feet by 8 feet in dimension. No in-water pile driving will be required to construct the facility.

Appendix A provides a preliminary plan sheet for the Pier E2 retention proposal.

#### Parking Area and Public Access features

A proposed parking area would have between approximately 10 to 14 parking spaces with sufficient handicap spaces to meet ADA compliance and CCSF requirements (if any). The parking area would be paved. The Department would construct a road east of the U.S. Coast Guard (USCG) station entrance connecting North Gate Road to the proposed project. The road would connect to and loop through the planned parking area. A hinged steel barrier gate would be installed at the eastern end of the parking area for operations and maintenance restrictions to the pedestrian pathways and Pier E2 observation area. A concrete sidewalk and hard surface pathway (pervious) next to the sidewalk would be installed from the gate eastward to the landing area. At the YBI shore, a concrete landing area would be constructed to provide connection from land to the bridge to Pier E2 observation area.

The approximate area of impervious surfaces created by the parking area and access, excluding surface area over water, would be approximately 35,000 sq. ft. A large portion of these impervious surfaces overlap with the impervious asphalt concrete roadway alignment originally planned (10,800 sq. ft.), but not constructed, as part of the SFOBB Project's YBITS-2 contract (EA No. 0120T4). Approximately 8,000 sq. ft. of new pervious surfaces would also be included in the project.

#### Shoreline Stabilization

Three rock walls are proposed to retain a roadway on a raised fill embankment, stabilize the existing YBI shoreline, and minimize erosion. The walls would retain level fills with a maximum height of 7 feet above existing grades. Rock wall construction would involve placement of sand fills for the roadway embankment followed by stone fills for the wall.

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The first wall would be approximately 460 feet long and located along the shoreline south of the proposed parking area and east of the existing USCG base. The first wall is proposed to have a setback of about 20 feet behind existing slopes.

The second and third walls would be placed on either side of the proposed abutment. These two walls would be 70 feet and 180 feet long and would be set back a minimum of 4 feet behind the finished face of the soil slope.

These rock walls, will consist of filter fabric placed on an excavated slope with sand and small diameter rock placed on the filter fabric and larger diameter rock placed on or adjacent to the smaller diameter rock. The second and third rock walls will be located above the mean higher high water level, while most of the first rock wall is expected to be placed above the mean higher high water level. Most of these walls will be pervious, but some portion may be made impervious by grouting the spaces between the rock. Depending on the location, a foundation may need to be created for the rock walls.

#### Construction and Water Pollution Control Measures

The work will be conducted using a combination of marine-based and traditional land-based equipment. For marine-based work, support barges would be used to move hydraulic excavators equipped with hoe rams, shearing attachments, drills, and other equipment, including cutting lances and torches to the site. This equipment would be used during operations on the piers. A barge-mounted crane would be used to move equipment between the pier and barge. For land-based work, cranes, excavators, graders and trucks for hauling debris or soil would be required. The construction operations would also require land- or barge-based concrete trucks and concrete pumps. Water pollution control measures implemented during construction activities will be described in a stormwater pollution prevention plan that will be submitted to the Water Board for acceptance.

#### Schedule

The Department plans to begin the construction operations in spring of 2018. Marine-based work is anticipated to be completed by the end of 2018. Land-based work may extend into 2019.

#### **Impacts to Surface Area of Waters of the U.S.**

Information provided as part of the original WDR application for the SFOBB Project described impacts to Waters of the U.S. (Block 18; Caltrans, 2001; described as “Other Waters of the U.S.” in the application).

#### Net Change in Surface Area to Waters of the U.S.

The WDR application indicated a decrease in surface area of Waters of the U.S. as compared to the pre-project surface area. The following table summarizes the approximate net change in surface area to Waters of the U.S. that were expected to occur as a result of the SFOBB Project as originally proposed and the changes associated with the proposed Pier E2 retention.

Activity	Surface Area
<b>Original East Span Project WDR Application</b>	
New Fill from SFOBB Project	2.43 acres <sup>a</sup> (reduction in surface area)
Original proposed removal of all SFOBB original east span bridge piers and fenders (Pier E2 through Pier E23)	1.98 acres <sup>a</sup> (increase in surface area)
<b>Pier E2 Proposal</b>	
Pier E2 retention (pier structure)	0.11 acres (reduction in surface area)
Addition of structures for Pier E2 access (shoreline abutment and pedestrian bridge from YBI shore to Pier E2)	0.05 acres (reduction in surface area)
<b>Resulting Net Change in Surface Area</b>	
Original SFOBB Project, Net Change in Surface Area to Waters of the U.S.	Decrease of 0.45 acre
Pier E2 Retention Proposal, Net Change in Surface Area to Waters of the U.S.	Decrease of 0.61 acre

Notes:

<sup>a</sup> Areas are based on National Geodetic Vertical Datum (NGVD) 1929 and were calculated to the High Tide Line (HTL).

Description of Impacts: Temporary Change in Surface Area of Waters of the U.S.

The WDR indicated that placement of temporary fill for in-Bay construction would temporarily decrease the surface area of Waters of the U.S. The following temporary fill-placement activities occurred during construction of the East Span project:

- A trestle in waters at the Oakland Touchdown for construction access
- A trestle at YBI for construction access
- Cofferdams to install piles and pile caps
- A geotube to serve as a tidal berm during construction to protect the westbound roadway at the Oakland Touchdown from wave action and tidal inundation
- Falsework to support new construction
- Falsework piers in deep water areas to erect and support the main suspension span

The following temporary fill placement activities did not occur:

- A barge dock at YBI to facilitate transport of construction materials, equipment, and personnel
- A second trestle at the Oakland Touchdown for construction access

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No new temporary fill in Waters of the U.S. is proposed for the construction of the structures for retention of Pier E2.

### **Surface Area Impacts to Wetlands or Special Aquatic Sites**

The WDR listed approximately 8.59 acres of total direct permanent and temporary impacts to special aquatic sites within Waters of the U.S. including direct permanent impacts of the elimination of approximately 3.24 acres of eelgrass habitat and approximately 4.19 acres of sand flat habitat. The WDR also listed direct temporal impacts during construction of approximately 0.36 acres of eelgrass habitat and approximately 0.80 acres of sand flat habitat. The direct and temporary impacts listed in the WDR are the same as those listed in the WDR application (Caltrans, 2001). The WDR application indicated that shading impacts would occur over sand flats at the Oakland Touchdown. Appendix B contains plan sheets submitted as part of the original WDR application that presented potential impacts to special aquatic sites.

To account for these impacts, the Department has completed mitigation requirements that have been accepted by the Water Board and other state and federal agencies and stakeholders involved in the SFOBB project. Though the proposed Pier E2 retention would have minimal new impacts from shading the surface area of Waters of the U.S. (approximately 0.05 acres from the Pier E2 pedestrian bridge), no new impacts to special aquatic sites (i.e., eelgrass beds or sand flat habitat) would occur.

### **Stormwater Treatment Strategy**

Low impact development (LID) measures will be implemented for the land-based portions of the project. To promote LID, impervious surfaces will be minimized by installing pervious surfaces where applicable. For impervious surfaces, stormwater treatment will be implemented to the maximum extent practicable, and shall be achieved via either biofiltration or bioretention measures.

If you have any questions or feedback on this submittal, please contact me at (510) 715-6816.

Sincerely,



HARDEEP TAKHAR  
Water Quality Program Manager  
Division of Environmental Planning & Engineering  
California Department of Transportation, District 4

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Enclosures

1. References
2. Figures
3. Appendices

cc:

Mr. Dale Bowyer, San Francisco Bay Regional Water Quality Control Board  
Mr. Derek Beauduy, San Francisco Bay Regional Water Quality Control Board  
Mr. Dragomir Bogdanić, District 4, California Department of Transportation  
Mr. Stefan Galvez-Abadia, District 4, California Department of Transportation

## References

**References**

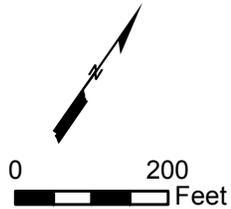
California Department of Transportation (Caltrans), Application for Water Quality Certification for the San Francisco-Oakland Bay Bridge East Span Seismic Safety Project, Sept. 2001.

California Regional Water Quality Control Board, San Francisco Bay Region, Adopted Order No. R2-2002-0011, Waste Discharge Requirements for California Department of Transportation, San Francisco-Oakland Bay Bridge East Span Seismic Safety Project, January 2002.

## Figures



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



SITE LOCATION  
SFOBB Pier E2 Retention Project  
San Francisco, CA

Date: 01/18/2018

Figure  
**1**



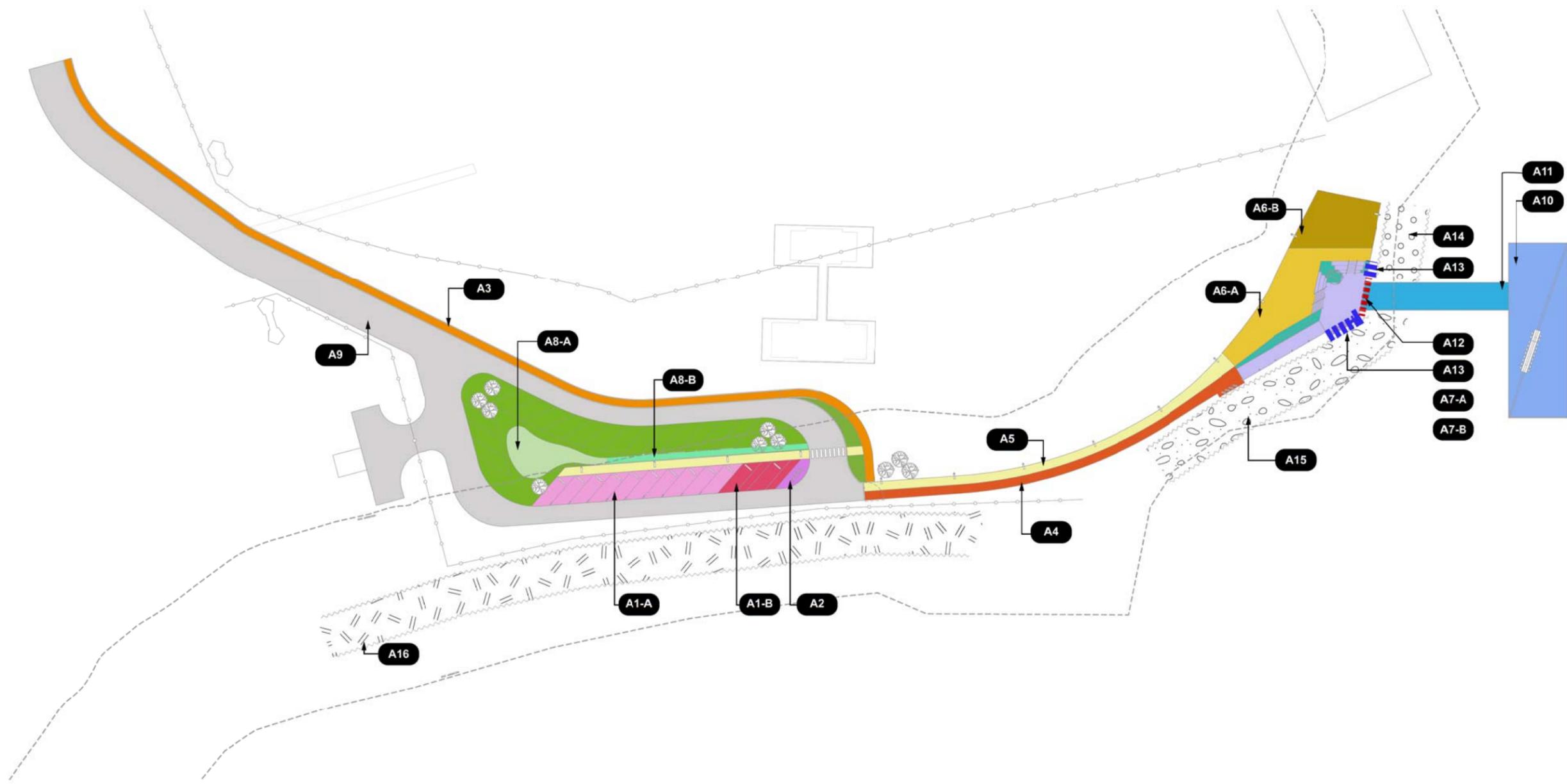
Pier E2

PIER E2 FROM THE YBI SHORE AND  
THE NEW SFOBB EAST SPAN  
SFOBB Pier E2 Retention Project  
San Francisco, CA

Date: 01/23/2018

Figure  
**2**

Appendix A  
Preliminary Plan Sheet  
Pier E2 Retention, Yerba Buena Island



AREA LEGEND

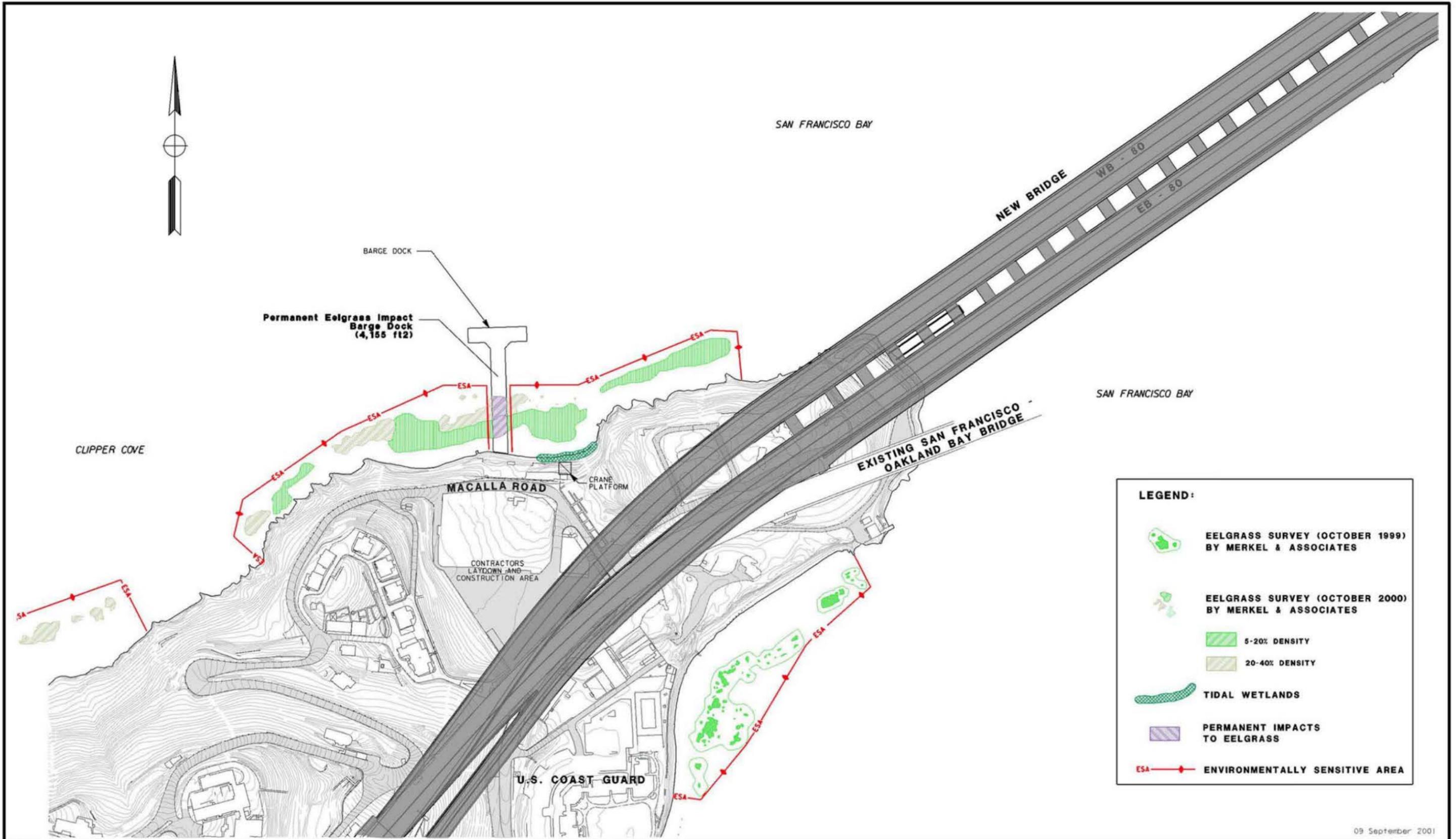
SYMBOL	TAG	DESCRIPTION	SYMBOL	TAG	DESCRIPTION	SYMBOL	TAG	DESCRIPTION
	A1-A	PARKING LOT STALLS		A7-B	LANDING AREA/PLANTING BED		A14	ROCK RETAINING WALL-R1
	A1-B	PARKING LOT (ADA STALLS)		A8-A	BIDSVALE		A15	ROCK RETAINING WALL-R2
	A2	BIKE PARKING		A8-B	CONVEYANCE SWALE		A16	ROCK RETAINING WALL-R3
	A3	PEDESTRIAN SIDEWALK		A9	ROADS			
	A4	6' WIDE SHARED PATH CONCRETE PAVING		A10	OBSERVATION AREA ON PIER E2			
	A5	6' WIDE SHARED PATH "GRANITECRETE" SURFACE		A11	PIER E2 BRIDGE			
	A6-A	LANDING-ADJACENT "GRANITECRETE" SURFACING		A12	PIER E2 BRIDGE ABUTMENT			
	A6-B	SERVICE VEHICLE TURNAROUND		A13	PIER E2 WINGWALL			
	A7-A	LANDING AREA/WALKWAY/STAIRS			PLANTING			

PIER RETENTION: YERBA BUENA  
AREA TAKE-OFFS KEY PLAN 1:40

AECOM 17-Jan-18



Appendix B  
Figure 7 and Figure 8  
Impacts Analysis Special Aquatic Sites  
Yerba Buena Island and Oakland Approach  
From Section 4 (Figures) of the WDR Application



**LEGEND:**

- EELGRASS SURVEY (OCTOBER 1999) BY MERKEL & ASSOCIATES
- EELGRASS SURVEY (OCTOBER 2000) BY MERKEL & ASSOCIATES
- 5-20% DENSITY
- 20-40% DENSITY
- TIDAL WETLANDS
- PERMANENT IMPACTS TO EELGRASS
- ESA - ENVIRONMENTALLY SENSITIVE AREA

09 September 2001

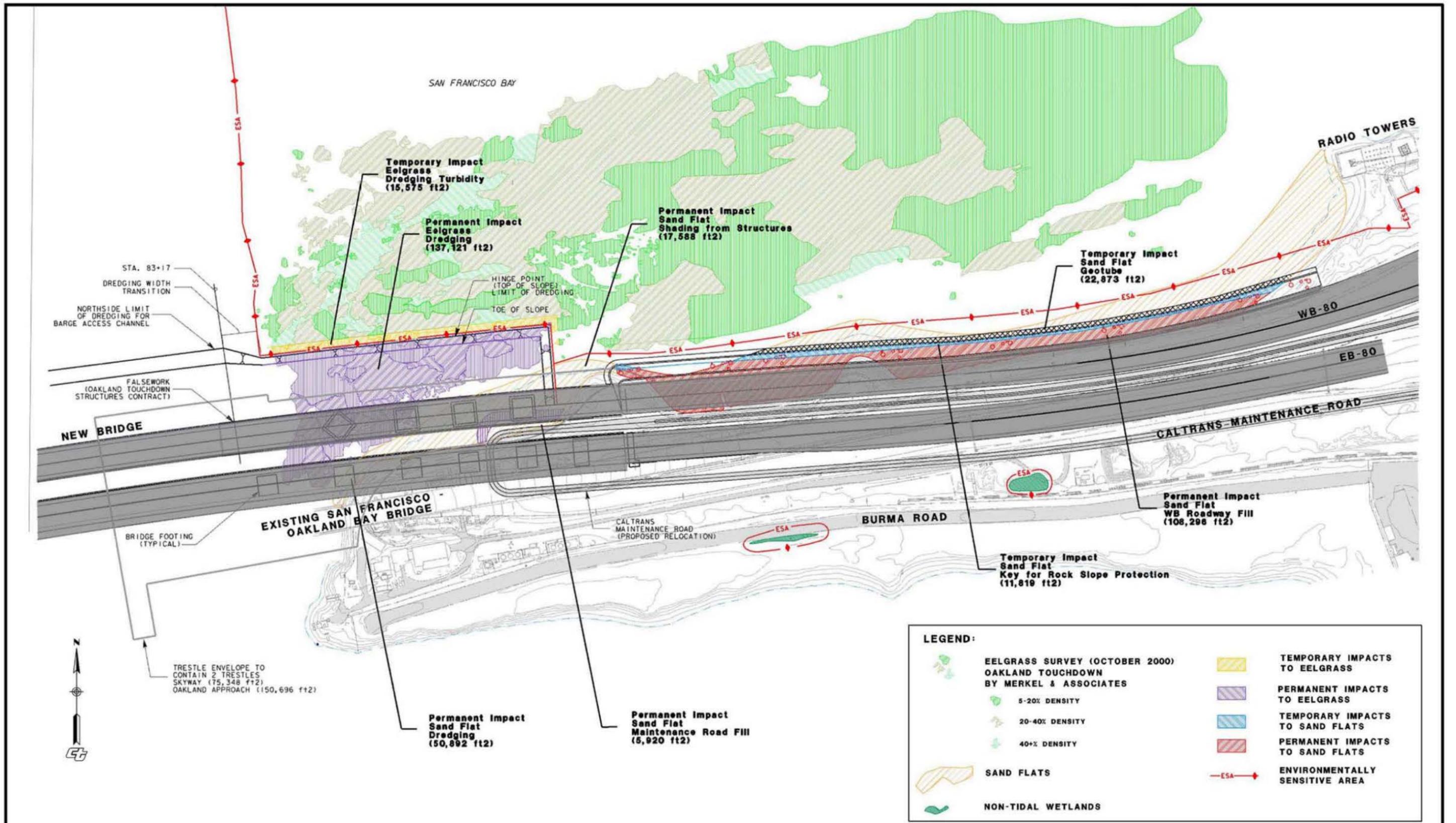


SFOBB  
EAST SPAN  
SEISMIC SAFETY  
PROJECT

Impacts Analysis Special Aquatic Sites  
Yerba Buena Island

Not to Scale

Figure 7



09 September 2001



SFOBB  
EAST SPAN  
SEISMIC SAFETY  
PROJECT

Impacts Analysis Special Aquatic Sites  
Oakland Approach

Not to Scale

Figure 8