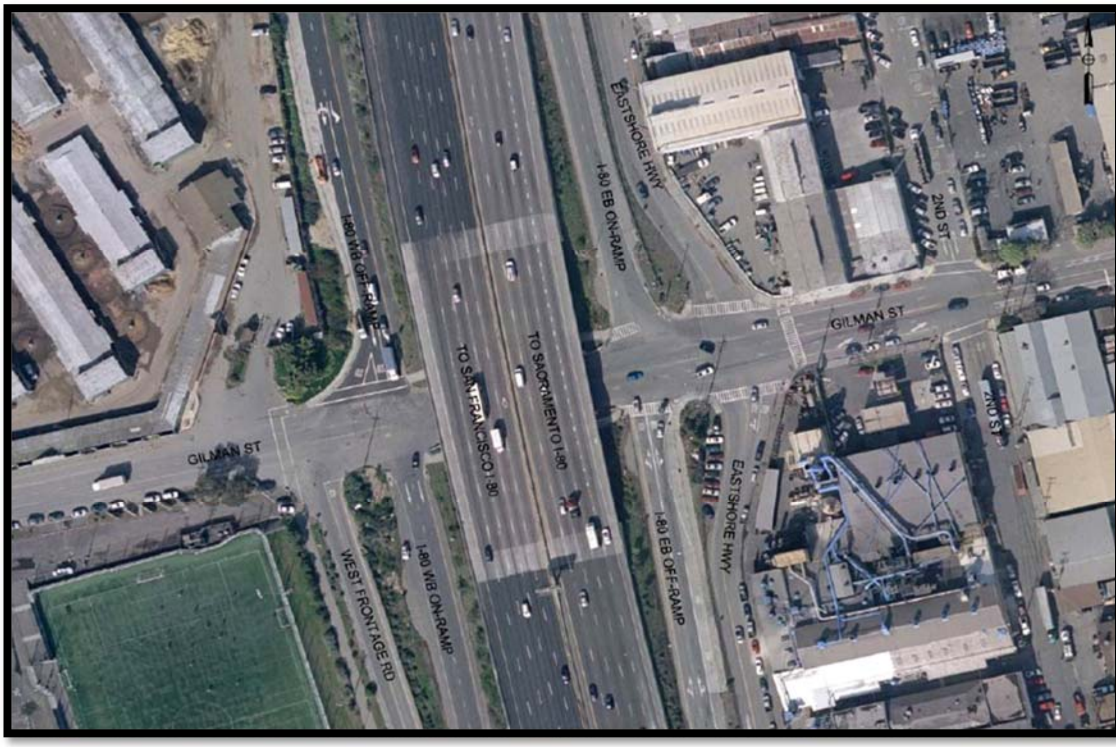
I-80/Gilman Street Interchange Improvement Project



Natural Environment Study

Caltrans District 4

Cities of Berkeley and Albany, Alameda County, California

EA 04-0A7700

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December 2018

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Natural Environment Study

STATE OF CALIFORNIA

Department of Transportation

Alameda County Transportation Commission

Cities of Berkeley and Albany

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Executive Summary

The California Department of Transportation (Caltrans) and the Alameda County Transportation Commission propose the Interstate 80 (I-80)/Gilman Street Interchange Improvement Project (Project) to improve traffic, pedestrian, and bicycle operations at the I-80/Gilman Street interchange in the cities of Berkeley and Albany, in Alameda County.

The purpose of the Project is to simplify and improve navigation, mobility, and traffic operations; reduce congestion, vehicle queues, and conflicts; improve local and regional bicycle connections and pedestrian facilities; and improve safety at the I-80/Gilman Street interchange. Traffic controls on all approaches to Gilman Street consist of stop signs and pavement markings. These conditions, along with an overall increase in vehicle traffic, have created poor, confusing, and unsafe operations in the interchange area for vehicles, pedestrians, and bicyclists. In addition, other needs related to modal interrelationships and social considerations have been identified, including closing the gap in the local (Gilman Street) and regional (San Francisco Bay Trail) bikeway system in the area, and providing safe pedestrian access to and from the project study area.

This Natural Environment Study (NES) provides technical information and evaluates the extent to which the Project may affect special-status species, their habitats, and other natural areas. The biological study area (BSA) for the Project includes the Project footprint and immediately adjacent areas. All biological resources within the BSA were evaluated, including the presence of jurisdictional waters, sensitive and regulated habitat, special-status plant and wildlife species, trees, and non-native invasive plant species.

The following habitats, natural communities of concern, and jurisdictional areas are present within the BSA and Project footprint:

- Other “Waters of the United States” (San Francisco Bay);
- San Francisco Bay Conservation and Development Commission (BCDC) jurisdiction;
- Critical Habitat for federally listed species; and
- Essential Fish Habitat.

No special-status plant species were found within the BSA during botanical surveys, and none are expected to occur due the urban character of the BSA. However, non-native invasive plant species were observed within the BSA.

Eighteen special-status wildlife species have the potential to occur in the BSA. Table 1 summarizes the special-status species that may occur in the BSA, their conservation status, the relative likelihood they may occur in the BSA, whether critical habitat for federally listed species occurs within the BSA, the effects finding for federally listed species, and Incidental Take Permit requirements for state listed species. In addition to the species in Table 1, migratory birds and bats may also occur in the BSA.

Table 1. Summary of Special-Status Animal Species with Potential to Occur in the BSA

Scientific Name **Common Name**	**Status**	**Potential to Occur**	**Critical Habitat in BSA**	**Effects Finding for Federally Listed Species**	**Incidental Take Permit for State Listed Species**
Acipenser medirostris Green sturgeon – southern DPS	FT	Low	Yes	May affect, but not likely to adversely affect.	N/A
Oncorhynchus mykiss irideus Steelhead – central California coast DPS	FT	Low	Yes	May affect, but not likely to adversely affect.	N/A
Oncorhynchus mykiss irideus Steelhead –Central Valley DPS	FT	Low	Yes	May affect, but not likely to adversely affect.	N/A
Oncorhynchus tshawytscha Chinook salmon – Central Valley spring run ESU	FT, ST	Low	No	May affect, but not likely to adversely affect.	No
Oncorhynchus tshawytscha Chinook salmon – Sacramento River winter run ESU	FE, SE	Low	Yes	May affect, but not likely to adversely affect.	No
Emys marmorata Western pond turtle	SSC	Low	N/A	N/A	N/A
Branta bernicla Brant	SSC	Moderate	N/A	N/A	N/A
Circus cyaneus Northern harrier	SSC	Moderate	N/A	N/A	N/A
Elanus leucurus White-tailed kite	FP	Moderate	N/A	N/A	N/A

Table 1. Summary of Special-Status Animal Species with Potential to Occur in the BSA

Scientific Name **Common Name**	**Status**	**Potential to Occur**	**Critical Habitat in BSA**	**Effects Finding for Federally Listed Species**	**Incidental Take Permit for State Listed Species**
Falco pereginus anatum American peregrine falcon	FP	Moderate	No	N/A	N/A
Asio flammeus Short-eared owl	SSC	Low	N/A	N/A	N/A
Charadrius nivosus ssp. *nivosus* Western snowy plover	FT, SSC	Low	No	No effect. No potential for take.	N/A
Sternula antillarum browni California least tern	FE, SE, FP	Low	No	No effect. No potential for take.	No
Geothlypis trichas sinuosa Saltmarsh common yellowthroat	SSC	Low	N/A	N/A	N/A
Melospiza melodia maxillaris Alameda song sparrow	SSC	Low	N/A	N/A	N/A
Antrozous pallidus Pallid bat	SSC	Low	N/A	N/A	N/A
Corynorhinus townsendii Townsend's big-eared bat	SSC	Low	N/A	N/A	N/A
Lasiurus blossevillii Western red bat	SSC	Low	N/A	N/A	N/A

Notes:
DPS = distinct population segment; ESU = evolutionary significant unit; FE = federally endangered; FT = federally threatened; SE = state endangered; ST = state threatened; SSC = California Species of Special Concern; FP = fully protected

Construction is proposed within San Francisco Bay. Within the BSA, approximately 1.79 acres of San Francisco Bay is jurisdictional under Sections 401 and 404 of the Clean Water Act (CWA), and 1.64 acres of San Francisco Bay is jurisdictional under Section 10 of the Rivers and Harbors Act. Table 2 summarizes the Project's impacts on "Waters of the United States."

Table 2. Impacts on Waters of the United States

Jurisdictional Feature	Impact Source	Impact Type	CWA Sections 404 and 401	RHA Section 10
San Francisco Bay	Cofferdam	Temporary, fill/disturbance	0.030 acre 170 CY	0.024 acre 155 CY
	Sediment removal	Permanent, grading	0.21 acre 100 CY	0.21 acre 100 CY
	Remove/replace headwall	Permanent, cut	0.001 acre 5 CY	0.0 acre 0 CY
	Remove/replace rock slope protection (RSP)	Permanent, cut/fill	0.0087 acre 60 CY	0.0057 acre 40 CY

There would be no temporary or permanent impacts on riparian vegetation along Codornices Creek as a result of construction of the Project. However, approximately six trees within the City of Berkeley and nine trees within Caltrans' right-of-way (ROW) would be removed as a result of construction of the Project.

Project features and Avoidance and Minimization Measures (AMM) would reduce impacts on biological resources, including water resources, special-status species, bats, migratory birds, marine mammals, fisheries, and trees as well as prevent the spread of invasive, non-native plant species. The proposed project features and AMMs listed below would reduce impacts on biological resources:

- Comply with Regulatory Agency Permits and Approvals
- Protect Environmentally Sensitive Areas
- Provide Environmental Awareness Training
- Implement Project Site Best Management Practices
- Replant, Reseed, and Restore Disturbed Areas
- Control Invasive Weeds
- Protect Water Quality
- Monitor Water Quality

- Conduct Pre-construction Surveys and Biological Monitoring
- Protect Fish, Aquatic Species, and Birds
- Evaluate and Replace Trees, as needed

With implementation of project features and AMMs:

- The Project would have **No Effect** on two federally listed bird species and **May Affect, But Is Not Likely to Adversely Affect** five federally listed fish species (Table 1).
- The Project would have minimal temporary adverse impacts on Critical Habitat and Essential Fish Habitat.
- The take of state listed species, California Species of Special Concern, Fully Protected species, migratory birds, and bats would not occur, nor would the harassment of marine mammals.

The Project is required to obtain the following permits and approvals from regulatory agencies:

- CWA Section 404 permit from the U.S. Army Corps of Engineers (USACE), including areas regulated under Section 10 of the Rivers and Harbors Act
- CWA Section 401 Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB)
- BCDC permit includes areas regulated under McAteer-Petris Act
- Federal Endangered Species Act Consultation with National Oceanic and Atmospheric Administration (NOAA) Fisheries for potential impacts on green sturgeon, steelhead, chinook, Critical Habitat, and Essential Fish Habitat

Compensatory mitigation for impacts on USACE, RWQCB, BCDC, and NOAA Fisheries jurisdictional areas, if necessary, would be determined during the process of obtaining permits and approvals from the aforementioned agencies.

Table of Contents

List of Figures

List of Tables

Appendices

List of Abbreviated Terms

AMM	avoidance and minimization measure
Bay Trail	San Francisco Bay Trail
BCDC	San Francisco Bay Conservation and Development Commission
BMP	best management practice
BSA	biological study area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CWA	Clean Water Act
DOT	U.S. Department of Transportation
DPS	Distinct Population Segment
EB	Eastbound
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EIR	Environmental Impact Report
ºF	degrees Fahrenheit
FESA	Federal Endangered Species Act
FGC	Fish and Game Code
FHWA	Federal Highway Administration
FMP	Fishery Management Plan
HTL	high-tide line
MBTA	Migratory Bird Treaty Act
MHW	mean high water
MMPA	Marine Mammal Protection Act
NAVD88	North American Vertical Datum of 1988
NB	Northbound
NCCP	Natural Community Conservation Planning
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NOAA	National Oceanic and Atmospheric Administration

NPPA	Native Plant Protection Act
PCB	Polychlorinated biphenyl
PM	Post Mile
Project	I-80/Gilman Street Interchange Improvement Project
ROW	right-of-way
RSP	rock slope protection
RWQCB	Regional Water Quality Control Board
SB	Southbound
SSC	Species of Special Concern
TCE	Temporary Construction Easement
TMP	Transportation Management Plan
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
VegCAMP	Vegetation Classification and Mapping Program
WB	Westbound

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Chapter 1 Introduction

The California Department of Transportation (Caltrans) and the Alameda County Transportation Commission propose the Interstate 80 (I-80)/Gilman Street Interchange Improvement Project (Project) to improve traffic, pedestrian, and bicycle operations. The Gilman Street Interchange is located on I-80 between post miles [PM] 6.38 to 6.95 in the cities of Berkeley and Albany, Alameda County (Figure 1 and Figure 2).

The purpose of the Natural Environment Study (NES) is to provide technical information and to determine the extent to which the Project may affect special-status species, their habitats, and natural communities occurring in the Biological Study Area (BSA), in accordance with the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA). The NES summarizes technical documents, such as focused species studies, wetland assessments, and biological assessments related to the effects on biological resources in the BSA for use in the environmental document. Avoidance and minimization measures (AMMs) are included in this document to ensure this Project will have minimal effects on protected habitats, and plant and wildlife species.

1.1 Project History

1.1.1 Purpose and Need

The purpose of the proposed Project is to:

- Simplify and improve navigation, mobility, and traffic operations on Gilman Street between West Frontage Road and 2nd Street through the I-80 interchange;
- Reduce congestion, vehicle queues, and conflicts;
- Improve local and regional bicycle and pedestrian facilities through the I-80/Gilman Street interchange; and
- Improve safety at the I-80/Gilman Street interchange.

A goal of the proposed project is to improve and enhance the Gilman Street entry corridor into West Berkeley.

I-80 is a 10-lane freeway that extends through the City of Berkeley. Gilman Street is classified as a major arterial and designated truck route, with a posted speed limit of 25 miles per hour. Vehicular traffic on Gilman Street is comprised of commuter, local, and commercial truck traffic. Traffic controls along Gilman Street include pavement markings, with channelization at the 6th, 8th, and 9th Street intersections only. Gilman Street has four 11-foot-wide lanes, with 6-

foot-wide shoulders where it passes underneath I-80. There are two lanes in both the eastbound (EB) and westbound (WB) directions that are intersected with four I-80 on- and off-ramps (West Frontage Road and Eastshore Highway). Traffic controls on all approaches to Gilman Street consist of stop signs and pavement markings. These configurations, along with an overall increase in vehicle traffic, have created poor and confusing operations in the interchange area.

In addition, other needs related to modal interrelationships and social considerations have been identified, including closing the gap in the local (Gilman Street) and regional (San Francisco Bay Trail) bikeway system in the area, and providing safe pedestrian access to and from the project study area.

1.2 Project Description

This section describes proposed actions and Project alternatives developed to meet the identified purpose and need of the Project, while avoiding or minimizing environmental impacts. The two alternatives include the Roundabout Alternative and the No Build Alternative.

The Project is located in Alameda County at the I-80/Gilman Street interchange in the cities of Berkeley and Albany (PM 6.38 to 6.95). Within the limits of the proposed Project, I-80 is a conventional 10-lane freeway with 12-foot-wide lanes and 11-foot-wide shoulders. Gilman Street is a 4-lane major arterial with 11-foot-wide lanes and 6-foot-wide shoulders that passes underneath I-80. The I-80/Gilman Street interchange is a four-lane arterial roadway (Gilman Street), with two lanes in the east/west direction that are intersected with four I-80 on- and off-ramps, West Frontage Road, and Eastshore Highway. The purpose of the Project is to simplify and improve navigation, mobility, and traffic operations; reduce congestion, vehicle queues, and conflicts; improve local and regional bicycle connections and pedestrian facilities; and improve safety at the I-80/Gilman Street interchange. Current conditions, along with an overall increase in vehicle traffic, have created poor, confusing, and unsafe operations in the interchange area for vehicles, pedestrians, and bicyclists.

Figure 1 shows the Project location map and Figure 2 shows the Project vicinity map.

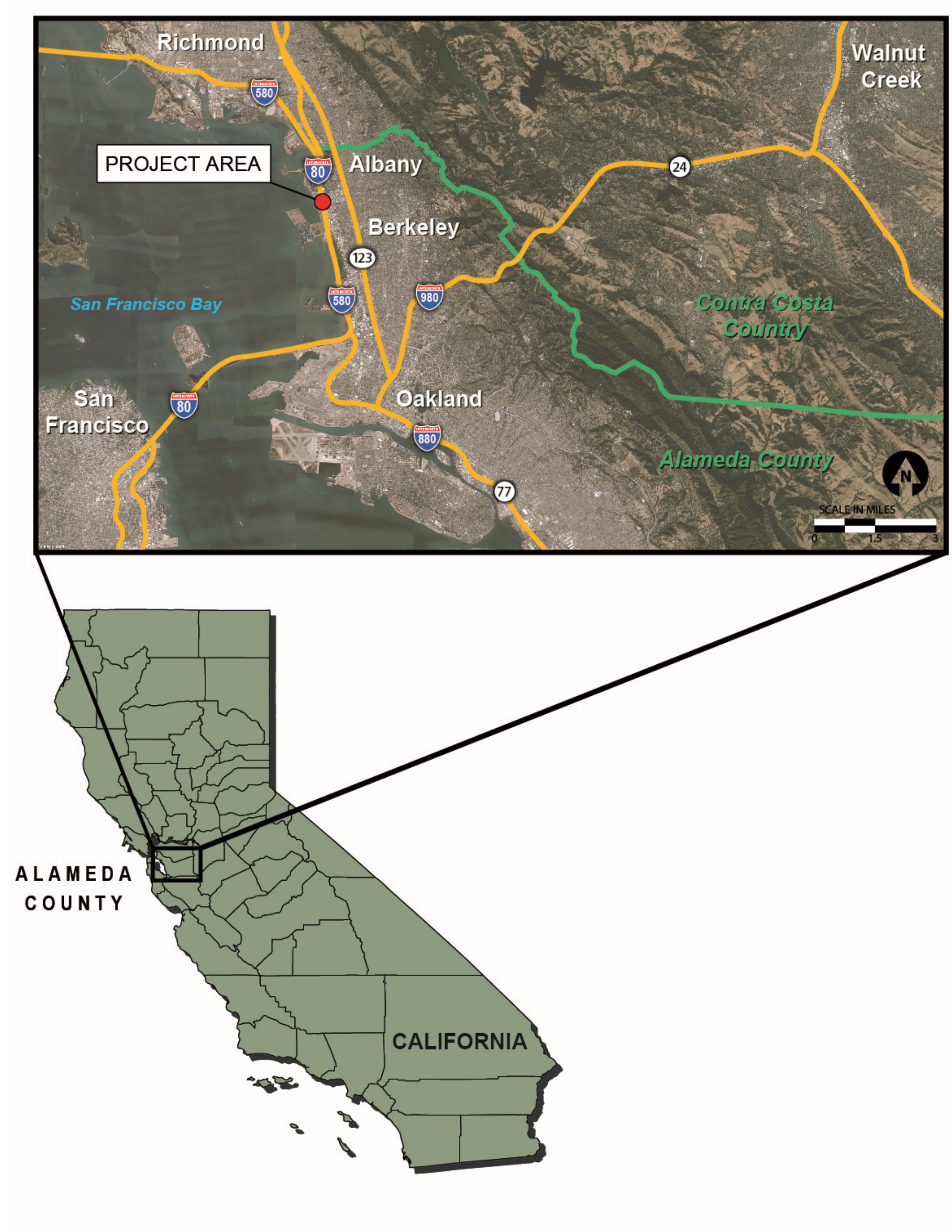

Figure 1. Project Location Map

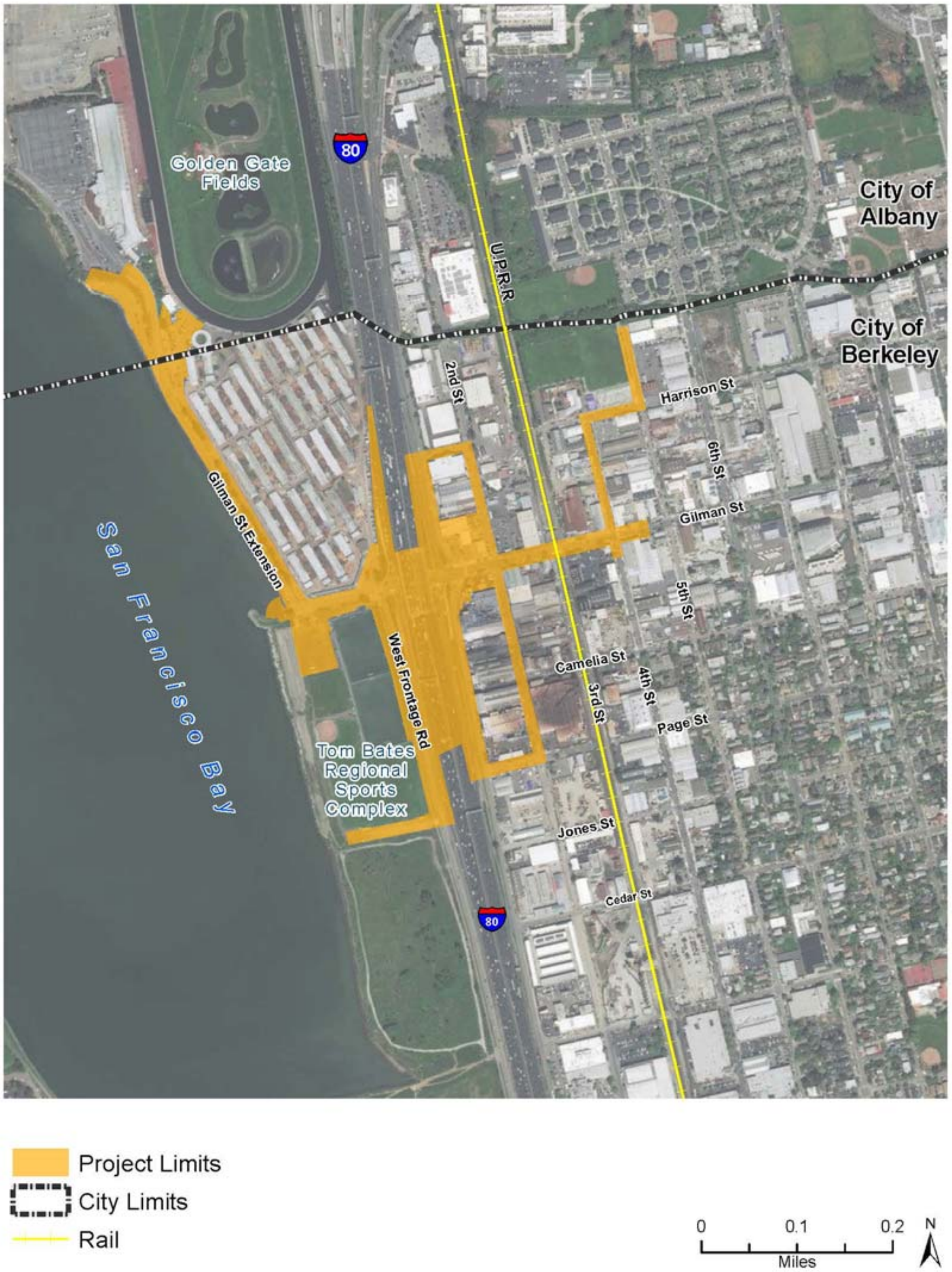

Figure 2. Project Vicinity Map

1.2.1 Build Alternative – Roundabout Alternative

The Roundabout Alternative includes the reconfiguration of I-80 ramps and intersections at Gilman Street. The existing non-signalized intersection configuration with stop-controlled ramp termini would be replaced with two hybrid single-lane roundabouts with multilane portions on Gilman Street at the I-80 ramp terminals. The I-80 ramps and frontage road intersections would be combined to form a single roundabout intersection on each side of I-80. Gilman Street would be reconstructed from the parking lots at Tom Bates Regional Sports Complex along the western portion of Gilman Street to the eastern side of the 4th Street intersection. Work would also include reconstruction of West Frontage Road and Eastshore Highway within the Project limits. In addition, the northern and southern legs of the eastern roundabout will be reduced from two lanes to one lane entering the roundabout. The southbound (SB) and northbound (NB) movements onto Eastshore Highway would instead be made via 2nd Street to Page Street or 2nd Street to Harrison Street.

Improvements associated with installation of the roundabouts would extend approximately 280 feet south on West Frontage Road from the Gilman Street interchange and approximately 250 feet north and 1,010 feet south on Eastshore Highway from the Gilman Street interchange. Work associated with reconfiguration of the EB I-80 off-ramp and on-ramp would extend approximately 820 feet south and 280 feet north of the interchange. Work associated with reconfiguration of the WB I-80 off-ramp and on-ramp would extend approximately 370 feet north and 230 feet south of the interchange. There are no proposed improvements to the freeway mainline. A metering light would be installed on West Frontage Road to regulate the volume of NB traffic that enters the western roundabout.

The western roundabout intersection would consist of four approaching legs: EB and WB Gilman Street, West Frontage Road, and I-80 WB off-ramp. There would be four exiting legs on the western roundabout: WB Gilman Street, SB West Frontage Road, WB I-80 Gilman on ramp, and EB on Gilman Street. The eastern roundabout intersection would include five approaching legs: I-80 EB off-ramp, NB and SB Eastshore Highway, and EB and WB Gilman Street. There would be three exiting legs on the eastern roundabout: the EB on-ramp, and WB and EB exits on Gilman Street. A left-turn pocket would be provided on Gilman Street for vehicles traveling EB turning onto NB 2nd Street. Left turns would be restricted from WB Gilman Street turning onto SB 2nd Street.

Improvements on 2nd Street north of Gilman Street include reduced crossing distances, new striping, signing, new pavement, additional landscaping, and new light poles. South of Gilman Street, improvements on 2nd Street include a bulb-out on the southeast corner of the intersection and converting the road to a single SB lane, while the other lane would be used as a designated parking/loading zone for businesses.

All modified roadways including ramps, frontage roads, and arterials would be improved. Improvements would include mill and overlay of pavement, striping, relocation of drainage inlets, lighting, and signage.

Several operational improvements would be incorporated in to the Project. A metering signal would be installed on the NB leg of the western roundabout to limit the volume of traffic bypassing the freeway using West Frontage Road. A queue cutting signal will be placed on the EB leg of the Union Pacific Railroad (UPRR) crossing at 3rd Street to prevent traffic from extending across the UPRR tracks.

PEDESTRIAN AND BICYCLE FACILITIES

A shared-use Class I path for pedestrians and bicyclists consisting of a 10-foot-wide travel way with a 2-foot-wide shoulder would be constructed on the south side of Gilman Street from 2nd Street to the eastern roundabout. The shared-use path would extend south along Eastshore Highway, where it would connect to a proposed bicycle/pedestrian overcrossing. The overcrossing would be constructed over I-80, merging into the existing San Francisco Bay Trail (Bay Trail) that runs parallel to West Frontage Road. The at-grade shared-use path would continue on the south side of Gilman Street under I-80 and terminate at the Bay Trail on the west side of the interchange.

The bicycle/pedestrian overcrossing would be similar to the existing bicycle/pedestrian overcrossing over I-80 at University Avenue. The structure would be located south of Gilman Street and have a minimum of three spans, with a maximum span length of approximately 230 feet over I-80. The foundations for the pedestrian bridge would be located on 2-foot diameter Cast-In-Drilled-Hole piles, extending 120 feet below the existing ground surface. There would be two staircases incorporated into the overcrossing, one on each side of I-80. The staircases would be approximately 45-feet-long, with a height of 25 feet to connect to the overcrossing. There would also be retaining walls on the east and west side of the overcrossing; they would be approximately 6-feet-tall at the highest point and taper down to zero. The maximum depth of the retaining wall piles is expected to be 50 feet below the ground surface.

Improvements would be made to provide bicycle connectivity from 4th Street to Harrison Street to 5th Street between the Codornices Creek Path and the two-way cycle track on Gilman Street. These improvements would consist of painted shared-lane markings, also known as sharrows, on the pavement throughout this corridor. Bicycle signage and pedestrian scale lighting would be constructed as part of the improvements.

Approximately 125 feet of new curb, gutter, and sidewalk would be constructed beginning at the corner of Harrison Street and 4th Street, and ending half-way down the block towards 5th Street. Parallel parking would be added along this new section of curb and sidewalk. The bus stop located at the corner of 4th Street and Gilman Street would be removed.

The Build Alternative includes a two-way cycle track on the south side of Gilman Street between the eastern I-80/Gilman Street ramps and 4th Street. The two-way cycle track is separated from vehicle traffic with a minimum 3-foot-wide striped buffer and a parking lane in some locations. The addition of the two-way cycle track would require installation of a traffic signal at the intersection of 4th Street and Gilman Street. The northern curb line on Gilman Street would also be shifted 2 to 5 feet north. Along Eastshore Highway, the sidewalk, curb, and gutter would be replaced between Page Street and Gilman Street.

West of the I-80/Gilman Street interchange, the existing Bay Trail would be extended approximately 660 feet west along the south side of Gilman Street, from its current terminus at the intersection of West Frontage Road and Gilman Street, to just beyond Berkeley's city limits. The proposed Bay Trail extension would be 10-feet-wide, unstriped, with 2-foot-wide unpaved shoulders on either side of the trail. On-street parking would be reduced by approximately 18 spaces at the end of Gilman Street as a result of the new trail extension.

Additional pedestrian and bicycle improvements include upgrading the 3rd Street/UPRR crossing at Gilman Street to accommodate the cycle track. Improvements would include relocation of the railroad crossing gate, and flashing beacons, addition of a bicycle signal, installation of medians, and improvement of striping and signage. All improvements will be approved by the UPRR and the California Public Utilities Commission (CPUC).

UTILITIES, LANDSCAPING, AND DRAINAGE

Existing PG&E overhead electric lines along Gilman Street, West Frontage Road, and Eastshore Highway would be relocated as part of the Roundabout Alternative. Some of these overhead lines may be placed underground. Minor drainage modifications would also be required to conform to the new roundabout alignment and drainage improvements associated with the two-way cycle track along Gilman Street. Utility relocations and new drainage systems may require trenching to a depth of approximately 6 feet. New light pole foundations and ramp metering poles would be 2 feet in diameter and would range from 5- to 13-feet-deep near the roundabout.

A separation device would be installed underground along Gilman Street to separate trash, mercury, and polychlorinated biphenyls (PCBs). A tidal flap gate would be installed at the existing headwall of the 60-inch reinforced concrete pipe at the western terminus of Gilman Street. Replacement of the existing headwall and associated riprap may include in-water work. Work below the mean high-water mark may be required. Dewatering or a coffer dam may also be required.

An existing East Bay Municipal Utility District (EBMUD) recycled water transmission line would be relocated and extended as part of the Project. Approximately 1,100 feet of a new 12-

inch recycled water transmission pipeline within Eastshore Highway from Page Street to Gilman Street, and approximately 1,050 feet of pipeline within Gilman Street from 2nd Street to the Buchanan Street extension, are part of the Roundabout Alternative. The maximum excavations for the pipe trench would be approximately 24-inches-wide by 60-inches-deep. Approximately 1,100 feet of an existing 10-inch EBMUD recycled water pipeline located within Caltrans' right-of-way (ROW) along the EB Gilman Street off-ramp shoulder would be abandoned in place or removed. A new City of Berkeley sewer line would be installed underneath Gilman Street beginning at a point east of the Interchange and ending on the west side of I-80 at the approximate entrance to the Tom Bates Sports Complex parking lots.

Existing vegetation is sparse in the Project footprint and consists of ornamental plantings or ruderal vegetation. The Roundabout Alternative would remove existing landscaping and trees on the sidewalk along Eastshore Highway from Page Street to Gilman Street. In addition, trees and/or shrubs would be removed at the I-80 off-ramps, WB I-80 on-ramp, and along the Bay Trail. Opportunities for new landscaping or artwork would be available in the center of each roundabout. Replacement plantings would occur near the areas of impact where feasible, as well as within the project limits. Aesthetic treatment of the roundabout will consider hardscape treatments and possibility of planting. Final determination will occur during the design phase of the project.

GOLDEN GATE FIELDS ACCESS

The existing driveway entrance to Golden Gate Fields stables is located immediately adjacent to the WB I-80 off-ramp on Gilman Street. Construction of the roundabout would expand the ramp intersection to the north and would require relocation of the access gate to Golden Gate Fields stables.

Alternate entrance and exit gate options to access Golden Gate Fields stables were evaluated and discussed with Golden Gate Fields Management in a series of meetings.

The Build Alternative would relocate the entrance and exit gate to the Gilman Street Extension. The existing gate would be connected to Golden Gate Fields Access Road, allowing the existing security shed to remain in place. The intersection of Gilman Street Extension with Golden Gate Fields Access Road would be improved, and Gilman Street would be widened to the south, to provide space for two, two-lane roads separated by a median. The Golden Gate Fields northeast (upper) parking lot would be resized and restriped to allow space for the Gilman Street Extension/Golden Gate Fields Access Road intersection. The existing security shed leading to the northeast and northwest parking lots would be moved north and reconstructed with new gates. The Golden Gate Fields northwest parking lot (lower) would be restriped to maximize the parking spaces. Both parking lots would be repaved, restriped, and lighting and landscaping elements would be added. Golden Gate Fields internal access road and the Gilman Street Extension would be repaved and restriped between Gilman Street and the northeast and northwest parking lots. Fifteen new parallel parking spaces would be striped along the Gilman Street access road. There would be no net loss of parking for Golden Gate Fields. The Roundabout Alternative is shown in Figure 3.

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Figure 3. Roundabout Alternative

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PROPERTY ACQUISITIONS

The Build Alternative would require acquisition of portions of ROW from Golden Gate Fields and East Bay Regional Park District (EBRPD). Relocation of a driveway currently facing Gilman Street would be required from a private property located on the corner of south side of Gilman and 2nd Streets. Additionally, a permit to construct from Golden Gate Fields would be required to complete improvements on their property. Temporary Construction Easements (TCEs) would be required for construction equipment storage, staging, and laydown from EBRPD and various property owners along Gilman Street, 4th Street, Harrison Street, and 5th Street.

CONSTRUCTION ACTIVITIES

Construction work for the Roundabout Alternative would be done primarily during daylight hours from 7:00 a.m. to 6:00 p.m.; however, there may be some work during night-time hours to avoid temporary roadway closures for tasks that could interfere with traffic, or create safety hazards. Work hours along the internal access road within Golden Gate Field property will only occur from 10:00 am to 5:00 pm, and night work will be restricted within or adjacent to Golden Gate Fields property. Examples of work activities throughout the project limits include striping operations, traffic control setup, installation of storm drain crossings, and asphalt pavement mill and overlay.

Anticipated temporary Project impacts would include: lane and ramp closures, detours, closure of existing bicycle or pedestrian facilities, and rerouting of transit service. A Transportation Management Plan (TMP) would be developed and implemented as part of the Project construction planning phase. The TMP would address potential impacts to circulation of all modes of travel (i.e., transit, bicycles, pedestrians, and private vehicles). Roadway and/or pedestrian access to all occupied businesses and respective parking lots would be maintained during Project construction. The TMP would include an evaluation of potential detour impacts, and would also include measures to minimize, avoid, and/or mitigate impacts to alternate routes, such as agreements with local agencies to provide enhanced infrastructure on arterial roads or intersections. The TMP would address coordination with local agencies for traffic personnel, especially for special event traffic through or near the construction zone.

Available staging areas include areas within the existing roadway, and Caltrans ROW. Additional staging areas may be required west of the Project on Gilman Street in one or two parking lots owned by EBRPD. Staging areas are shown on Figure 3.

The following types of equipment are anticipated to be used during construction: auger drill rig, backhoe, compactor, concrete pump, crane, dozer, excavator, front end loader, grader, heavy duty dump trucks, jackhammer, vibratory roller, and pavement breaker.

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Chapter 2 Study Methods

This section presents the relevant regulations and the methods used to evaluate the effect of the Project on special-status species, their habitats, and other natural areas.

2.1 Regulatory Requirements

The Project has the potential to affect natural resources within the jurisdiction of the following regulatory agencies:

- U.S. Fish and Wildlife Service (USFWS)
- National Oceanic and Atmospheric Administration (NOAA) Fisheries
- U.S. Army Corps of Engineers (USACE)
- California Department of Fish and Wildlife (CDFW)
- San Francisco Bay Regional Water Quality Control Board (RWQCB)
- San Francisco Bay Conservation and Development Commission (BCDC)

2.1.1 Federal Regulations

FEDERAL ENDANGERED SPECIES ACT (16 USC § 1531)

The Federal Endangered Species Act (FESA) prohibits the "take" of federally-listed species, which is defined as killing, harming, or harassment of such species. Take can also include habitat modification or degradation that affect essential behavioral patterns such as breeding, feeding, or sheltering, and therefore indirectly cause injury or death to the listed species.

CLEAN WATER ACT, SECTIONS 404 (33 USC § 1344) AND 401 (33 USC § 1341)

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.

Section 404: USACE jurisdiction over fill materials in essentially all water bodies, including wetlands. All federal agencies are to avoid impacts to wetlands whenever there is a practicable alternative. Section 404 established a permit program administered by USACE regulating the discharge of dredged or fill material into waters of the US (including wetlands).

Section 401: Requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S., must obtain a state certification that the discharge complies with other provisions of CWA. The RWQCBs administer the certification program in California.

The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

RIVERS AND HARBORS ACT OF 1899, SECTION 10 (33 USC § 401 ET SEQ.)/GENERAL BRIDGE ACT OF 1946 (33 USC § 525 ET SEQ.)

Requires permits in navigable waters of the U.S. for all structures such as riprap and activities such as dredging. Navigable waters are defined as waters subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means to transport interstate or foreign commerce. USACE grants or denies permits based on the effects on navigation.

MIGRATORY BIRD TREATY ACT (16 USC §§ 703-712)

The Migratory Bird Treaty Act (MBTA) with Canada, Mexico, and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California Fish and Game Code (Sec 3500) also prohibits the destruction of any nest, egg, or nestling.)

MARINE MAMMAL PROTECTION ACT (16 USC §§ 1361–1362, 1371-1389, 1401-1407, 1411-1418, 1421-1421H, 1423-1423H)

The Marine Mammal Protection Act (MMPA) establishes a federal responsibility to conserve marine mammals, with management vested in the Department of Commerce (NOAA Fisheries) for cetaceans and pinnipeds other than walrus. The Department of the Interior (USFWS) is responsible for all other marine mammals, including sea otter, walrus, polar bear, dugong and manatee. The MMPA generally assigns identical responsibilities to the Secretaries of the two departments.

The MMPA is the main regulatory vehicle that protects marine mammal species and their habitats in an effort to main sustainable populations. In doing so, the statute outlines prohibitions, required permits, criminal and civil penalties, and international aspects in addressing marine mammals. The act requires consultation on any action that may adversely affect marine mammals and provides a mechanism for an “incidental” take of species not listed under the FESA.

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (16 USC §§ 1801-1884)

The Magnuson-Stevens Fishery Conservation and Management Act of 1976 was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

EXECUTIVE ORDER 13112 (INVASIVE SPECIES) (64 FEDERAL REGISTER 6183)

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

Under the E.O., federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

EXECUTIVE ORDER 11990 (PROTECTION OF WETLANDS) (42 FEDERAL REGISTER 26961)

This EO established a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The U.S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this direction. On federally funded projects, impacts on wetlands must be identified. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding.

An additional requirement is to provide early public involvement in projects affecting wetlands. FHWA provides technical assistance (Technical Advisory 6640.8A) and reviews environmental documents for compliance.

2.1.2 State Regulations

CALIFORNIA ENDANGERED SPECIES ACT OF 1984 (FISH AND GAME CODE [FGC] § 2050 ET SEQ.)

The California Endangered Species Act (CESA) requires projects that could affect a state-listed threatened or endangered species to consult with CDFW. Section 2080 of CESA prohibits “take” of any of these species. The take of state-listed species incidental to otherwise lawful activities requires a permit, pursuant to §2081(b) of CESA.

PORTER-COLOGNE WATER QUALITY CONTROL ACT (WATER CODE § 13000 ET SEQ.)

This regulatory law is becoming more prominent on projects involving impacts to isolated waters of the State (non-404/401 waters). The RWQCB is increasingly requiring Waste Discharge Requirement permits for impacts to waters of the State.

NATIVE PLANT PROTECTION ACT (FGC § 1900 ET SEQ.)

The Native Plant Protection Act (NPPA) directs CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in the State." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants.

SENATE BILL 857 FISH PASSAGE (STREETS AND HIGHWAYS CODE § 156.1)

Senate Bill 857 was passed in 2006. This regulation requires Caltrans to remediate barriers to salmon and steelhead habitat on the State highway system. Caltrans is required to provide a report to Legislature in October of each year that provides information on progress for the previous year. Caltrans is required to track and provide information on crossing assessments, District and Fish Passage Advisory Committee biological priorities, information for remediated barriers, and status of locations currently in project delivery. Projects to remediate fish passage barriers to salmon and steelhead are regulated by agencies with jurisdiction over listed species such as CDFW and NOAA Fisheries, as well as agencies with jurisdiction over other project area resources and habitat.

2.2 Studies Required

Surveys and technical studies were performed to satisfy the requirements of NEPA and CEQA. Studies for biological resources that may be present in the Project area included a wetlands delineation, reconnaissance level surveys, and database and literature searches. The methods utilized are described in this section.

2.2.1 Biological Study Area

The BSA is defined as the area (land and water) that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. For this Project, the BSA was established to encompass the limits of construction activity (i.e., Project footprint) and surrounding areas potentially inhabited by regional special-status species that could be affected by the Project, where appropriate. In urban areas, the BSA is limited to the Project footprint, as there are few to no biological resources and any biological resources that are present would be habituated to continuous disturbance. Near the Gilman Street outfall, the Project footprint is the same as the BSA. In vegetated areas, the BSA includes a buffer around the Project footprint to include adjacent biological resources (e.g., nesting birds) that may be indirectly impacted by construction activities. This buffer is generally limited to 50 feet beyond the Project footprint.

However, a non-standard buffer was included in the BSA; the entire spit of land at the end of Gilman Street was included in the BSA, as were the staging areas south of the Tom Bates Sports Complex that extend to existing fence lines to the north and south, and to the shore of San Francisco Bay to the west. For this NES, the BSA is the “action area” used for NEPA documents, FESA consultation, and CWA consultation.

2.2.2 Database Searches and Literature Search

Special-status species include those listed as endangered, threatened, or rare under the FESA or CESA; plants listed as rare by the California Native Plant Society (CNPS) and protected under the NPPA; migratory birds protected under the MBTA; and California Species of Special Concern (SSC). Information about habitat types and special-status species that can occur in the BSA was obtained from the following sources:

- California Natural Diversity Database (CNDDB);
- CNPS Online Inventory of Rare and Endangered Plants;
- USFWS online database for federally threatened and endangered species;
- NOAA Fisheries California Species List Tool;
- Calflora;
- eBird; and
- Existing literature as cited in the text.

The USFWS Information for Planning and Consultation online tool, and the NOAA Fisheries California Species List Tool were utilized to query all federally endangered, threatened, candidate, and proposed plants and wildlife species as well as designated critical habitat (defined as habitats determined to be essential for the survival of that species) with known occurrences in the Briones Valley, Oakland East, Oakland West, Richmond, San Francisco North, and San Quentin quadrangles. These quadrangles are within a 5-mile radius of the BSA.

The CNDDB was used to query all special-status plants and wildlife species with known occurrences within a 5-mile radius surrounding the BSA. A 5-mile radius was selected because most of the proposed Project footprint is in highly urbanized areas, along a heavily used roadway, and along previously disturbed roadsides, which restrict dispersal of native plants and animal species.

Additionally, Calflora and eBird, both of which contain geospatial databases showing occurrences of plants and bird species respectively, were reviewed to evaluate the presence or potential presence of special-status species on the lists generated by the USFWS, NOAA Fisheries, and CNDDB. Additionally, eBird contains occurrences of brant, a species of goose that is designated as a California SSC, in close proximity to the BSA, whereas this species was not included on the agency-generated lists. Although not included on the agency-generated lists, brant was included in this NES due to the documented presence of this species within 5 miles of the BSA.

With the exception of Calflora and eBird, results from all database queries are presented in Appendix A.

2.2.3 Survey Methods

Biological surveys were conducted to determine the presence or absence of special-status plants and wildlife and their habitats, as well as document all species occupying the BSA. The entire BSA was surveyed on foot, and photos were taken to document the presence of habitat for special-status species. General notes were also collected, including observed plants and wildlife. Representative site photographs are located in Appendix B, and a list of all species observed within the BSA are included in Appendix C.

Wetlands delineations were performed pursuant to the USACE's Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). The Jepson Manual, Vascular Plants of California, and Jepson Flora Project (Jepson Flora Project 2018) were used for plant nomenclature and identification. Plant wetland indicator status was provided by The National Wetland Plant List: 2016 Wetland Ratings (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016).

2.3 Personnel and Survey Dates

Table 3 summarizes the survey types, dates, and Project personnel involved with biological surveys conducted to date within the BSA. The credentials for the personnel listed in Table 3 are described below.

Table 3. Survey Dates and Personnel

Survey Type	Date(s)	Areas Surveyed	Personnel
Botanical, Wildlife	March 17, 2016	Entire BSA	J. Elia, S. Elder
Wetlands Delineation	May 18, 2016	Drainage ditch along west side of Bay Trail	J. Elia, S. Elder
Trees	May 18, 2016	Entire BSA	J. Elia, S. Elder

Survey Type	Date(s)	Areas Surveyed	Personnel
Botanical, Wildlife	June 8, 2016	Entire BSA	S. Etchell, K. Stelljes
Wetlands Delineation	April 11, 2018, May 10, 2018	Outfall of 60-inch culvert at the end of Gilman Street near San Francisco Bay; Codornices Creek area	P. Gill, S. McGarvey, L. Bingham
Trees, Botanical	April 25, 2018	Western and northeastern portion of BSA	S. Elder, E. Matthews
Botanical, Wildlife	April 26, 2018	Codornices Creek	S. Etchell

The credentials for survey personnel are as follows:

- Sandra Etchell, B.A. Biology; M.S. Environmental Management; 22 years' experience
- Jared Elia, B.S. Environmental Science; 12 years' experience
- Scott Elder, B.S. Environmental Geography; 5 years' experience
- Kathryn Stelljes, B.A. Environmental Studies; 29 years' experience
- Emily Matthews, B.S. Environmental Science; 1 year experience
- Paula Gill, M.S., PWS Plant Biology, 18 years' experience
- Sadie McGarvey, B.A. Wildlife Biology, 9 years' experience
- Lauren Bingham, B.S. Biological Sciences, 14 years' experience

2.4 Agency Coordination and Professional Contacts

On October 18, 2018, official species lists were obtained from the USFWS San Francisco Bay-Delta and Sacramento offices through the Information for Planning and Consultation online system. The consultation code for the San Francisco Bay-Delta office is 08FBDT00-2018-SLI-0187, and the consultation code for the Sacramento office is 08ESMF00-2018-SLI-1814.

A wetland delineation was performed in 2016, and the report was submitted to the USACE. Caltrans subsequently submitted a memorandum to clarify the findings of the wetland delineation and to provide additional information regarding the provenance of potential wetlands in the Project area. Following submittal of the memorandum, the BSA map was revised to exclude a potential jurisdictional feature, and the revised map was submitted to the USACE. The USACE issued a Jurisdictional Determination based on the wetland delineation report, memorandum, and revised BSA map. The Jurisdictional Determination is dated March 16, 2018, under File Number 2017-00207S (Appendix D). Additionally, an addendum to the original wetland delineation was prepared for areas within the current BSA boundary that were not studied as part of the original wetland delineation (Appendix E). The USACE performed a field review of the wetland delineation addendum in October 2018; Caltrans is currently coordinating with the USACE to obtain a Jurisdictional Determination for the addendum.

On April 11, 2018, Caltrans requested technical assistance from NOAA Fisheries with respect to identifying impacts green sturgeon and salmonids. During August and September of 2018, NOAA Fisheries and Caltrans discussed the scope of the project, including the proposed in-water work to install a tidal flap gate, and the resulting impacts. Once the Biological Assessment is complete, Caltrans will initiate consultation with NOAA Fisheries under FESA Section 7.

No other agency coordination has occurred to-date.

2.5 Limitations That May Influence Results

All necessary portions of the BSA were accessible to biologists. Surveys were conducted during the seasons when special-status species that could occur near the BSA would be observable. However, plant species populations naturally fluctuate from year to year in response to environmental variation and other ecological factors. Special-status plant species may flower earlier than usual, may not flower at all, may exhibit annual life cycles, or may be relatively short-lived following periods of abnormal rainfall. California recently experienced a prolonged drought, which could be a limitation that may influence the study results.

In addition, wildlife species may be cryptic, generally difficult to detect, transient, nocturnal, or migratory species that may only occur within the BSA for short or fleeting time periods. Wildlife species may only be active during particular times of the year, such as the breeding season, or may only use the BSA temporarily as a migration corridor between other areas of more optimal habitat. For these reasons, wildlife species may be present, but not observed. This limitation may influence the study results.

Chapter 3 Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions

This section provides a description of the existing biological and physical conditions within the BSA.

3.1.1 Study Area

The BSA is located in the cities of Berkeley and Albany along the eastern shoreline of San Francisco Bay in Alameda County, California. A majority of the BSA consists of urban land uses with industrial, commercial, and recreational properties as well as transportation uses. Industrial and commercial properties are located to the north and south of Gilman Street from I-80 to 5th Street. The McLaughlin Eastshore State Park is in the southwest corner of the BSA. Golden Gate Fields, an equestrian race track, and the Tom Bates Regional Sports Complex are located in the northwestern and western portion of the BSA respectively. Just beyond these recreational facilities lies San Francisco Bay, a tidal estuary, which forms the western boundary of the BSA. The northeastern portion of the BSA at the end of 5th Street includes the riparian corridor of Codornices Creek. Figure 4 displays the boundaries of the BSA overlaid on an aerial image of the Project vicinity.

Figure 4. Biological Study Area and Project Impact Area

3.1.2 Physical Conditions

CLIMATE AND HYDROLOGY

According to the Köeppen climate classification system, the Project area has a Mediterranean climate, characterized by hot, dry summers and mild, moist winters (George 2015). The BSA generally experiences precipitation between mid-October and mid-April. A climate summary for the nearest NOAA weather station with similar elevation and topography to the BSA reports the following precipitation and temperature information (Western Regional Climate Center 2016):

Berkeley Station 040693

- Average annual rainfall is 23.41 inches
- Average temperatures range seasonally from 49.2 to 64.9 degrees Fahrenheit (ºF)

The maximum average temperature reported for the Project area was 71.8 ºF in September and the minimum average temperature was 42.7 ºF in December. The wettest month of the year is January with an average rainfall of 4.98 inches, and the driest month is July with an average of 0.03 inches. Winter storms are usually of moderate duration and intensity (Western Regional Climate Center 2016).

Per the CalWater watershed delineation in Caltrans' Water Quality Planning Tool (2012), the Project area is mostly within an undefined Hydrologic Sub-Area (#203.30) of the Berkeley Hydrologic Area and Bay Bridges Hydrologic Unit, and a portion of Gilman Street Extension is within an undefined Hydrologic Sub-Area (#203.10) of the Bay Waters Hydrologic Area and Bay Bridges Hydrologic Unit. The Alameda County Flood Control and Water Conservation District identifies the Project area as within the Gilman Street, Codornices Creek, and Schoolhouse Creek watersheds.

The Project's receiving waterbodies are San Francisco Bay Central, Schoolhouse Creek, and Codornices Creek. Runoff from the Project is either collected or conveyed through a system of culverts or sheet flows directly into the San Francisco Bay Central**,** Schoolhouse Creek, or Codornices Creek**.** Schoolhouse Creek is located outside the Project limits and runs under Virginia Street, crossing I-80 at approximately Post Mile 6.15. Sheet flow from 5th Street discharges into Codornices Creek. Codornices Creek is located at the border of the Project limits on 5th Street, crossing I-80 at approximately Post Mile 6.91. No work is proposed at this creek crossing. The Gilman Street watershed consists of a networks of drainage facilities that connects to a 60-inch reinforced concrete pipe that runs under Gilman Street and discharges to San Francisco Bay; there are no surface waterbodies within this watershed. See Figure 6 for a hydrology map.

TOPOGRAPHY

The BSA is relatively flat, sloping gently from east to west toward the San Francisco Bay. Along Gilman Street, elevations range from 11.7 feet west of West Frontage Road to 13.8 feet at the I-80 eastbound ramp intersection (North American Vertical Datum [NAVD] 88). I-80 is elevated on fill north and south of Gilman Street, and crosses over Gilman Street in an elevated bridge structure with a vertical clearance of approximately 15 feet (Caltrans 2014). Refer to Figure 5 for a topographic map of the BSA vicinity.

SOILS

The Natural Resources Conservation Service's "Web Soil Survey" (U.S. Department of Agriculture 2018) classifies the area as Urban Land. Urban Land is defined as land covered by buildings, roads, parking lots, and other structures. The soil within this unit is heterogeneous fill derived from various sources. Many areas designated under this map unit consist of reclaimed land adjacent to San Francisco Bay. The Urban Land soil unit has not been assigned a Hydrologic Soil Group.

Within the BSA, available log of test borings identifies the soils within the top 10 feet of the surface as generally consisting of very loose to loose sand and very soft organic clay (Bay mud) with approximately 5 to 10 feet of the surface soils being fill material (Caltrans 2014). Soils near the headwall of the Gilman Street outfall consist of artificial fills having mixtures of sand, silt, clay, and debris with unknown proportions; young Bay mud likely underlies the artificial fills.

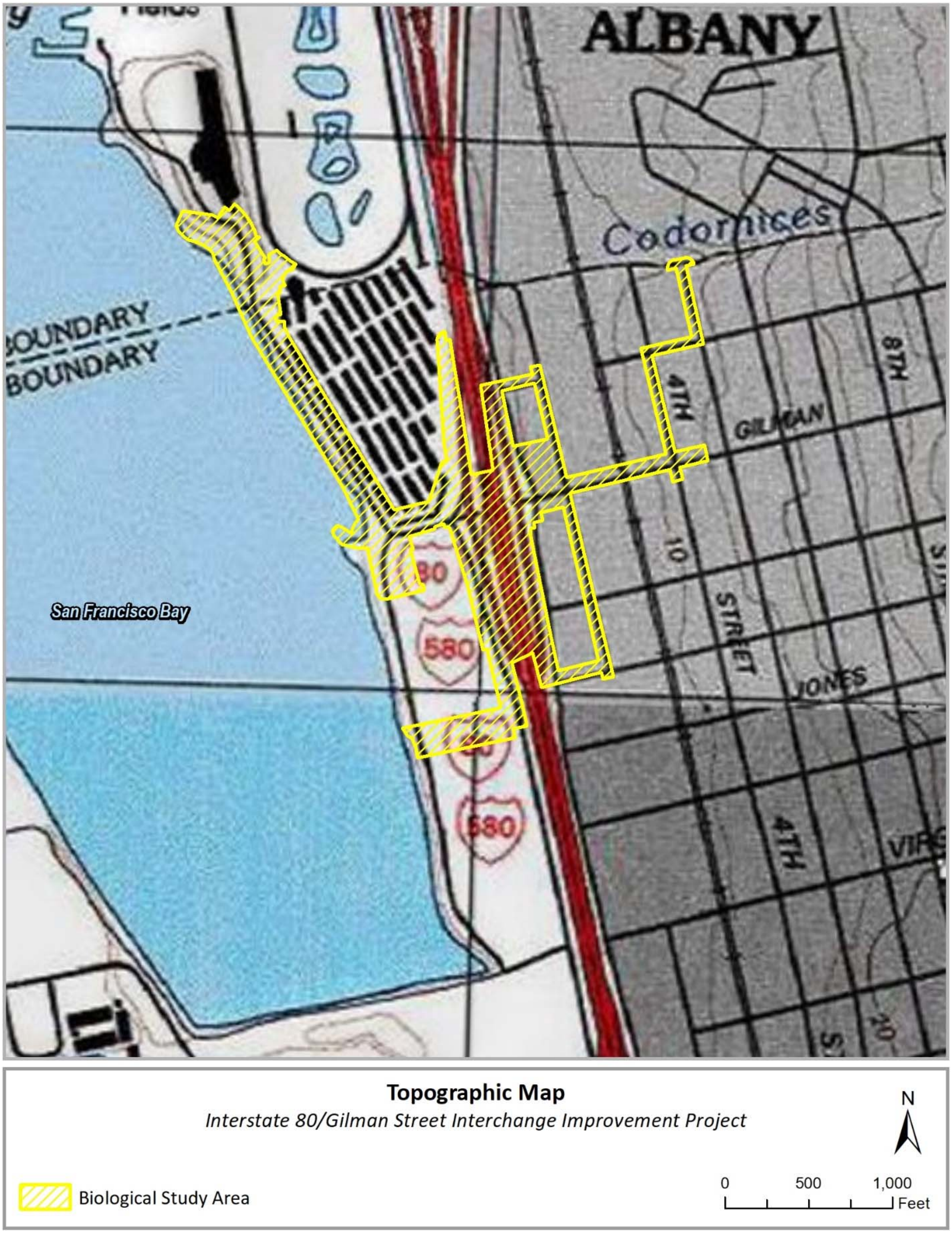

Figure 5. Topographic Map

Figure 6. Hydrology Map

3.1.3 Biological Conditions in the Biological Study Area

This section discusses vegetation and wildlife observed or expected to occur within the BSA. Appendix C provides a complete list of plant and animal species observed during field surveys.

VEGETATION COMMUNITIES/HABITATS

The plant community descriptions and nomenclature conventions within this analysis use the CDFW's California Wildlife Habitat Relationships System. This classification system is based on the 59 wildlife habitats described in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) and may be used as a model to predict which wildlife species may inhabit specific plant communities. Supplemental information was obtained from *California Vegetation* (Holland and Keil 1995).

The predominant vegetation community in the BSA is urban, which includes street trees, planting strips, lawns, and ruderal vegetation. In addition to urban communities, there is an area near the Tom Bates Regional Sports Complex that contains annual grassland. The western margin of the BSA is located in San Francisco Bay, a tidal estuary. Lastly, a small area in the northeastern corner of the BSA is located within the riparian corridor of Codornices Creek. These four vegetation communities comprise the habitats present within the BSA, with urban being the characteristic vegetation community of the BSA. See Figure 7 for a map depicting these vegetation communities/habitats within the BSA.

Figure 7. Vegetation Communities/Habitats within the BSA

Urban

The California Wildlife Habitat Relationships System classifies urban vegetation into five areas: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Urban areas typically have a small diversity of trees, shrubs, and grasses, but greater productivity than natural grasslands due to abundant water and fertilizer (McBride and Reid 1988). Examples include residential landscapes, golf courses, parks, and school grounds. Non-native landscape species and invasive weeds are common. Within the BSA, most of the urban vegetation is limited to ornamental plantings or ruderal species as well as lawns/turf associated with the Tom Bates Regional Sports Complex and Harrison Park.

Landscaped environments are generally unlikely to provide suitable habitat for special-status plants due to disturbed soil conditions, use of pesticides, hardscape development, and the predominance of exotic landscape species that out-compete native vegetation for resources. However, areas with exotic or landscape tree species could provide foraging, roosting, and nesting habitat for birds and, to a lesser degree, roosting bats. Special-status or protected wildlife species that could be present within the landscaped portion of the BSA would include nesting birds and roosting bats.

Trees within the urban habitat include both native and non-native, as well as landscape species consisting of acacia (*Acacia* sp.), apple (*Malus* sp.), ash (*Fraxinus* sp.), birch (*Betula* sp.), blue gum eucalyptus (*Eucalyptus globulus*), maple (*Acer* sp.), myoporum (*Myoporum* sp.), olive (*Olea europaea*), pittosporum (*Pittosporum* sp.), plum (*Prunus* sp.), London planetree (*Platanus hybrida*), evergreen pear (*Pyrus kawakamii*), and California sycamore (*Platanus racemosa*).

Annual Grassland

Non-native or naturalized annual grasses and forbs have largely replaced pre-colonial grasslands on rolling hills and flat plains in California (Kie 2005). Grasses germinate in the fall but do not grow vigorously until temperatures increase. By the summer, fields typically contain a large amount of dead plant material. Many annual grass species grow alongside other habitats, such as oak woodland, perennial grassland, and vernal pools.

One large area of annual grassland habitat is present within the BSA, located south of the proposed staging area adjacent to the Tom Bates Regional Sports Complex. This area is an open, uncultivated field with scattered coyote brush (*Baccharis pilularis*). This area is accessible by the public, and based on aerial imagery, this area is maintained on a regular basis.

Non-native grasses found in the BSA consisted of common wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), foxtail chess (*Bromus madritensis*), soft brome (*Bromus hordeaceus*), Italian rye grass (*Festuca perennis*), and foxtail barley (*Hordeum murinum*). Other non-native herbaceous species observed included wild radish (*Raphanus sativus*), bedstraw (*Galium* ssp.), and bull mallow (*Malva nicaeensis*). Native species observed included common yarrow (*Achillea millefolium*), California poppy (*Eschscholzia californica*), lupine (*Lupinus* sp.), vetch (*Vicia* ssp.) and coyote brush.

Annual grassland provides foraging, breeding, and resting areas for a wide variety of birds, mammals, and reptiles. Several grassland-associated wildlife species were observed during field surveys, including Brewer's blackbird (*Euphagus cyanocephalus*), white-crowned sparrow (*Zonotrichia leucophrys*), and American crow (*Corvus brachyrhynchos*). No special-status plant or wildlife species were observed in the annual grassland habitat; however, there is potential for overwintering burrowing owls to utilize this habitat for foraging.

Willow Riparian

Riparian habitat occupies areas along the banks of rivers, streams, lakes, springs, and floodplains. Riparian areas generally contain nutrient-rich alluvial soils and have high water tables and are subject to periodic flooding. One or more species of deep-rooted deciduous trees, shrubs, and herbs grow in these habitats. Riparian habitat can co-occur with wetlands and both can serve as buffers between uplands and adjacent bodies of water. Dominant tree species in California riparian communities commonly include cottonwoods, but the dominant species can vary from valley oak and sycamore in the foothills, to alder in the mountains, and mesquite in the deserts. Riparian habitat supports one of the greatest varieties of wildlife in the state (Holland and Keil 1995; Barbour et al. 2007). The extent of riparian habitat within the BSA is limited to the banks immediately adjacent to Codornices Creek.

Willow riparian habitats are dominated by one or more species of willow (*Salix* sp.). Within the BSA, arroyo willow (*S. lasiolepis*) is the dominant species. However, scattered coast live oak (*Quercus agrifolia*) also occur. The understory consists of annual grasses with few snowberry plants (*Symphoricarpos* sp.). An active bushtit (*Psaltriparus minimus*) nest was observed within this habitat along Codornices Creek, and the adults were seen foraging for and feeding the hatchlings. Special-status species that inhabit riparian areas include the Western pond turtle (*Emys marmorata*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), and Western red bat (*Lasiurus blossevillii*). However, evidence was observed that indicate homeless persons may use the riparian corridor as an encampment, which reduces the likelihood that this area provides suitable habitat for special-status species.

Estuarine

Estuarine habitats are located in coastal waterbodies where a river or a creek enters the ocean. As opposed to a saline ocean or a freshwater lake, estuaries often contain a range of salinities, with increasing salt concentrations closer to the ocean and decreasing salt concentrations upstream.

Additionally, estuaries can contain both open water, or pelagic habitat, as well as coastal habitats, including subtidal vegetation like eelgrass meadows and emergent vegetation such as salt marshes. The intertidal zone, or the area that is submerged during high tides and exposed during low tides, provides a variety of habitats like mud flats, sandy beaches, and rocky tide pools. The San Francisco Bay region has the largest estuarine system along the Pacific Coast of North and South America, with a vast area of salt marsh. (Barbour et al. 2007)

Estuarine habitat is located in the far western portion of the BSA, just beyond the rock slope protection (RSP) that forms the existing shoreline of San Francisco Bay. Estuaries are highly productive ecosystems, supporting large numbers of invertebrates, fish, and birds. Estuaries provide habitats for the reproduction, feeding, resting, and cover of mammals and birds. Estuaries also provide shelter for large numbers of waterfowl and shorebirds, especially during winter. Eelgrass, a type of submerged aquatic vegetation, is an important component of estuarine systems. There are no known eelgrass beds within the BSA; however, eelgrass beds are located about 10 feet beyond the western boundary of the BSA in the waters of San Francisco Bay near Golden Gate fields (NOAA Fisheries 2014a).

Wildlife that can occur in estuarine habitats could include gulls, waterfowl, marine mammals, such as seals and sea lions, variety of fish and benthic species, as well as shorebirds in the intertidal zone. Special-status wildlife that may occur in this habitat type include anadromous fish, like salmon and sturgeon, and brant. Brant geese almost exclusively feed upon eelgrass, and the distribution of this goose is closely associated with eelgrass.

HABITAT CONNECTIVITY

Habitat connectivity within the BSA and in the vicinity of the BSA is limited due to the presence of the built environment in Berkeley and Albany. The industrial and commercial areas within the BSA in addition to the residential areas to the east of the BSA limit habitat connectivity between the Berkeley Hills and the coastal plain adjacent to San Francisco Bay. However, the riparian and aquatic habitat associated with Codornices Creek provides a mostly uninterrupted east-west dispersal corridor for wildlife, including fish, birds, and mammals, though several culverts may impede or limit connectivity for both aquatic and terrestrial species. The rocky shoreline of San Francisco Bay as well as the UPRR corridor may provide marginal opportunities for north-south movement of wildlife, though these areas are fairly disturbed and regularly trafficked by humans.

The 60-inch reinforced concrete pipe (RCP) at the western terminus of Gilman Street, described in Section 1.2.1, Utilities, Landscaping, and Drainage, is the outfall for the Gilman Street watershed. The Gilman Street watershed consists entirely of underground drainage culverts, which do not provide suitable habitat for fish. Furthermore, Oakland Museum of California watershed maps indicate that the 60-inch RCP and associated tributary drainage systems do not represent a creek or creeks that were historically placed into underground drainage pipes. Therefore, the Gilman Street watershed has never provided suitable aquatic habitat for fish. Although fish or other aquatic species may incidentally enter these underground pipes in the existing condition, the pipes do not provide connectivity to any upstream aquatic habitat either currently or historically.

3.2 Regional Species and Habitats and Natural Communities of Concern

The database searches included the Oakland West and Richmond quadrangles, which include the location of the BSA as well as nearby Briones Valley, Oakland East, San Francisco North, and San Quentin quadrangles. These are the quadrangles within a 5-mile radius of the BSA.

3.2.1 Special-Status Plant Species

The USFWS, CNDDB, and CNPS databases list a total of 84 special-status plant species with a potential to occur in the BSA. The names and legal status of each of these species are identified in Table 4, as well as a general description of the habitat requirements, whether or not suitable habitat is present in the BSA, and the potential that each species would occur in the BSA. Plant species with no potential to occur in the BSA are not discussed further in this NES. The database results are provided in Appendix A. See Figure 8 for special-status plant species that have historically been identified within a 5-mile radius of the Project.

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State/CNPS			Flowering Period	Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Amorpha californica var. *napensis* Napa false indigo	--	--	1B.2	Apr-Jul	Broadleafed upland forest in openings, chaparral, cismontane woodland. Elev. 400-6,560 ft	**None.** No forests, woodlands or chaparral habitat present.	N/A
Amsinckia lunaris Bent-flowered fiddleneck	--	--	1B.2	Mar-Jun	Coast bluff scrub, cismontane woodland, **valley and foothill grassland**[1]. Elev. 10-1,650 ft	**None.** No *Amsinckia* species found during botanical surveys.	N/A
Androsace elongata ssp. *acuta* California androsace	--	--	4.2	Mar-Jun	Chaparral, cismontane woodland, coastal sage scrub, **valley and foothill grassland**, meadows and seeps, pinyon and juniper woodland. Elev. 492-3,937 ft	**None.** No *Androsace* species found during botanical surveys.	N/A
Arabis blepharophylla Coast rockcress	--	--	4.3	Feb-May	Broadleafed upland forest, coastal prairie, coastal scrub, coastal bluff scrub. Elev. 10-3,609 ft	**None.** No forest, prairie, or scrub habitat present.	N/A
Arctostaphylos franciscana Franciscan manzanita	FE	--	1B.1	Feb-Apr	Coastal scrub in serpentinite soil. Elev. 200-1,000 ft	**None.** No scrub habitat present.	No effect. Not present.
Arctostaphylos montana ssp. *ravenii* Presidio manzanita	FE	SE	1B.1	Feb-Mar	Chaparral, coastal prairie, in serpentinite outcrops in coastal scrub. Elev. 150-700 ft	**None.** No chaparral, prairie, or scrub habitat present.	No effect. Not present.

[1] Valley and foothill grassland is defined as introduced, annual Mediterranean grasses, and native herbs. On most sites, native bunch grass species, such as needlegrass, have been largely or entirely supplanted by introductions. Stands rich in natives are usually found on unusual substrates, such as serpentinite or somewhat alkaline soils (CNPS 2016).

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State/CNPS**			**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Arctostaphylos pallida Pallid manzanita	FT	SE	1B.1	Dec-Mar	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub in siliceous shale, sandy or gravelly. Elev. 600-1,530 ft	**None.** No forest, woodland, chaparral or scrub habitat present.	No effect. Not present.
Arenaria paludicola Marsh sandwort	FE	SE	1B.1	May-Aug	Freshwater or brackish marshes and swamps in openings with sandy soil. Elev. 10-560 ft	**None.** No freshwater or brackish marsh habitat present.	No effect. Not present.
Aspidotis carlotta-halliae Carlotta Hall's lace fern	--	--	4.2	Jan-Dec	Chaparral, cismontane woodland. Elev. 328-4,593 ft	**None.** No chaparral or woodland habitat present.	N/A
Astragalus nuttallii var. *nuttallii* Ocean bluff milk-vetch	--	--	4.2	Jan-Nov	Coastal bluff scrub, coastal dunes. Elev. 10-394 ft	**None.** No scrub or dune habitat present.	N/A
Astragalus tener var. *tener* Alkali milk-vetch	--	--	1B.2	Mar-Jun	Playas, **valley and foothill grasslands** in adobe clay soils, vernal pools in alkaline soils. Elev. 3-200 ft	**None.** No *Astragalus* species found during botanical surveys.	N/A
Balsamorhiza macrolepis Big-scale balsamroot	--	--	1B.2	Mar-Jun	Chaparral, **valley and foothill grassland**, cismontane woodland. Elev. 115-4,805 ft	**None.** No *Balsamorhiza* species found during botanical surveys.	N/A
Calamagrostis ophitidis Serpentine reed grass	--	--	4.3	Apr-Jun	Chaparral, lower montane coniferous forest, meadows and seeps, **valley and foothill grassland**. Elev. 295-3,495 ft	**None.** No serpentine soils present.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State/CNPS			Flowering Period	Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Calochortus pulchellus Mt. Diablo fairy-lantern	--	--	1B.2	Apr-Jun	Chaparral, cismontane woodland, **valley and foothill grassland**. Elev. 100-2,800 ft	**None.** No *Calochortus* species found during botanical surveys.	N/A
Calochortus tiburonensis Tiburon mariposa-lily	FT	ST	1B.1	Mar-Jun	**Valley and foothill grassland** in serpentinite soil. Elev. 170-500 ft	**None.** No *Calochortus* species found during botanical surveys.	No effect. Not present.
Calochortus umbellatus Oakland star-tulip	--	--	4.2	Mar-May	Chaparral, lower montane coniferous forest, broadleafed upland forest, **valley and foothill grassland**, cismontane woodland. Elev. 328-2,297 ft	**None.** No *Calochortus* species found during botanical surveys.	N/A
Calystegia purpurata ssp. *saxicola* Coastal bluff morning-glory	--	--	1B.2	Mar-Sep	Coastal bluff scrub, coastal dunes, coastal scrub, North Coast coniferous forest. Elev. 330-500 ft	**None.** No suitable habitat present.	N/A
Carex comosa Bristly sedge	--	--	2B.1	May-Sep	Coastal prairie, margins of marshes and swamps, **valley and foothill grassland**. Elev. 0-2,100 ft	**None.** No *Carex* species found during botanical surveys.	N/A
Carex praticola Northern meadow sedge	--	--	2B.2	May-Jul	Mesic meadows and seeps. Elev. 0-10,500 ft	**None.** No meadow or seep habitat present.	N/A
Castilleja affinis var. neglecta Tiburon paintbrush	FE	FT	1B.2	Apr-Jun	**Valley and foothill grassland** in serpentinite soil. Elev. 200-1,300 ft	**None.** No serpentine soil present.	No effect. Not present.

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State/CNPS			Flowering Period	Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Castilleja ambigua var. *ambigua* Johnny-nip	--	--	4.2	Mar-Aug	Coastal bluff scrub, coastal scrub, coastal prairie, marshes and swamps, **valley and foothill grassland**, vernal pool margins. Elev. 0-1,427 ft	**None.** No *Castilleja* species found during botanical surveys.	N/A
Chloropyron maritimum ssp. *palustre* Point Reyes salty bird's-beak	--	--	1B.2	Jun-Oct	Coastal salt marshes and swamps. Elev. 0-30 ft	**None.** No marsh or swamp habitat present.	N/A
Chorizanthe cuspidata var. *cuspidata* San Francisco Bay spineflower	--	--	1B.2	Apr-Jul	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Elev. 10-700 ft	**None.** No scrub, prairie, or dune habitat present.	N/A
Chorizanthe robusta var. *robusta* Robust spineflower	FE	--	1B.1	Apr-Sep	Chaparral, cismontane woodland, coastal bluff scrub, coastal dunes. Elev. 9-245 ft	**None.** No chaparral, woodland, scrub or dune habitat present.	No effect. Not present.
Cicuta maculata var. *bolanderi* Bolander's water-hemlock	--	--	2B.1	Jul-Sep	Coastal, fresh or brackish marshes and swamps. Elev. 0-660 ft	**None.** No freshwater or brackish marsh habitat present.	N/A
Cirsium andrewsii Franciscan thistle	--	--	1B.2	Mar-Jul	Broadleafed upland forest, coastal bluff scrub, coastal prairie, mesic coastal scrub sometimes in serpentinite soil. Elev. 0-500 ft	**None.** No forest, scrub, or prairie habitat present.	N/A
Cirsium hydrophilum var. *vaseyi* Mt. Tamalpais thistle	--	--	1B.2	May-Aug	Broadleafed upland forest, chaparral, meadows and seeps. Elev. 590-1,017 ft	**None.** No forest, chaparral, meadow or seep habitat present.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed**	**State**	**CNPS**	**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Clarkia concinna ssp. *automixa* Santa Clara red ribbons	--	--	4.3	Apr-Jul	Chaparral, cismontane woodland. Elev. 300-5,000 ft	**None.** No chaparral or woodland habitat present.	N/A
Clarkia franciscana Presidio clarkia	FE	SE	1B.1	May-Jul	Coastal scrub, **valley and foothill grassland** in serpentinite soil. Elev. 80-1,100 ft	**None.** No *Clarkia* species observed during botanical surveys.	No effect. Not present.
Collinsia corymbosa Round-headed Chinese-houses	--	--	1B.2	Apr-Jun	Coastal dunes. Elev. 0-70 ft	**None.** No dune habitat present.	N/A
Collinsia multicolor San Francisco collinsia	--	--	1B.2	Feb-May	Closed-cone coniferous forest, coastal scrub sometimes in serpentinite soil. Elev. 100-820 ft	**None.** No forest or scrub habitat present.	N/A
Dirca occidentalis Western leatherwood	--	--	1B.2	Jan-Apr	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, mesic riparian woodland. Elev. 80-1,400 ft	**None.** No forest, chaparral, or woodland habitat present.	N/A
Eriogonum luteolum var. *caninum* Tiburon buckwheat	--	--	1B.2	May-Sep	Chaparral, cismontane woodland, coastal prairie, **valley and foothill grassland** in serpentinite, sandy to gravelly soil. Elev. 0-2,300 ft	**None.** No *Eriogonum* species observed during botanical surveys.	N/A
Eriophorum gracile Slender cottongrass	--	--	4.3	May-Sep	Bogs and fens, meadows and seeps, upper montane coniferous forest. Elev. 4,200-9,515 ft	**None.** No bog, fen, meadow, seep, or forest habitat present.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State/CNPS**			**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Eryngium jepsonii Jepson's coyote thistle	--	--	1B.2	Apr-Aug	Vernal pools, **valley and foothill grassland**. Elev. 9-1,000 ft	**None.** No *Eryngium* species found during botanical surveys.	N/A
Erysimum franciscanum San Francisco wallflower	--	--	4.2	Mar-Jun	Coastal dunes, coastal scrub, chaparral, **valley and foothill grassland**. Elev. 0-1,804 ft	**None.** No *Erysimum* species found during botanical surveys.	N/A
Extriplex joaquinana San Joaquin spearscale	--	--	1B.2	Apr-Oct	Chenopod scrub, meadows and seeps, playas, **valley and foothill grassland** in alkaline soil. Elev. 3-3,000 ft	**None.** No *Extriplex* species found during botanical surveys.	N/A
Fissidens pauperculus Minute pocket moss	--	--	1B.2	No flowering	North coast coniferous forest in damp soil. Elev. 30-3,360 ft	**None.** No forest habitat present.	N/A
Fritillaria liliacea Fragrant fritillary	--	--	1B.2	Feb-Apr	Cismontane woodland, coastal prairie, coastal scrub, **valley and foothill grassland** often in serpentinite soil. Elev. 10-1,350 ft	**None.** No *Fritillaria* species observed during botanical surveys.	N/A
Gilia capitata ssp. *chamissonis* Blue coast gilia	--	--	1B.1	Apr-Jun	Coastal dunes, coastal scrub. Elev. 5-660 ft	**None.** No dune or scrub habitat present.	N/A
Gilia millefoliata Dark-eyed gilia	--	--	1B.2	Apr-Jul	Coast dunes. Elev. 5-100 ft	**None.** No dune habitat present.	N/A
Grindelia hirsutula var. *maritima* San Francisco gumplant	--	--	3.2	Jun-Sep	Coastal scrub, coastal bluff scrub, **valley and foothill grassland**. Elev. 49-1,000 ft	None. No *Grindelia* species found during botanical surveys.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

***Scientific Name* Common Name**	**Status Fed/State/CNPS**			**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Helianthella castanea Diablo helianthella	--	--	1B.2	Mar-Jun	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, **valley and foothill grassland** usually in rocky, axonal soils, and partial shade. Elev. 200-4,300 ft	**None.** No *Helianthella* species found during botanical surveys.	N/A
Hemizonia congesta ssp. *congesta* Congested-headed hayfield tarplant	--	--	1B.2	Apr-Nov	**Valley and foothill grassland** sometimes along roadsides. Elev. 65-1,850 ft	**None.** No *Hemizonia* species found during botanical surveys.	N/A
Hesperolinon congestum Marin western flax	FT	ST	1B.1	Apr-Jul	Chaparral, **valley and foothill grassland** in serpentinite soil. Elev. 20-1,200 ft	**None.** No *Hesperolinon* species found during botanical surveys.	No effect. Not present.
Heteranthera dubia Water star-grass	--	--	2B.2	Jul-Oct	Marshes and swamps in alkaline still, or slow moving water. Elev. 100-5,000 ft	**None.** No marsh or swamp habitat present.	N/A
Hoita stobilina Loma Prieta hoita	--	--	1B.1	May-Oct	Chaparral, cismontane woodland, and riparian woodland, usually in serpentinite or mesic soil. Elev. 100-2,800 ft	**None.** No chaparral or woodland habitat present.	N/A
Holocarpha macradenia Santa Cruz tarplant	FT	SE	1B.1	Jun-Oct	Coastal prairie, coastal scrub, **valley and foothill grassland.** Elev. 30-720 ft	**None.** No *Holocarpha* species found during botanical surveys.	No effect. Not present.
Horkelia cuneata var. *sericea* Kellogg's horkelia	--	--	1B.1	Feb-Jul	Chaparral, closed-cone coniferous forest, coastal dunes, coastal scrub. Elev. 30-660 ft	**None.** No chaparral, forest, dune, or scrub habitat present.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State/CNPS**			**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Hypogymnia schizidiata Island tube lichen	--	--	1B.3		Grows on bark and wood of hardwoods and conifers in chaparral and closed-cone coniferous forest. Elev. 0-1,772 ft	**None.** No chaparral or closed-cone coniferous forest present.	N/A
Iris longipetala Coast iris	--	--	4.2	Mar-May	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elev. 0-1,969 ft	**None.** No prairie, forest, meadow, or seep habitat present.	N/A
Isocoma arguta Carquinez goldenbush	--	--	1B.1	Aug-Dec	**Valley and foothill grassland** in alkaline soil. Elev. 3-70 ft	**None.** No *Isocoma* species found during botanical surveys.	N/A
Juglans californica Southern California black walnut	--	--	4.2	Mar-Aug	Chaparral, coastal scrub, cismontane woodland. Elev. 164-2,953 ft	**None.** No chaparral, scrub, or woodland habitat present.	N/A
Lathyrus jepsonii var. *jepsonii* Delta tule pea	--	--	1B.2	May-Jul (Aug-Sep)	Marshes and swamps, usually on marsh and slough edges. Elev. 0-16 ft	**None.** No marsh or swamp habitat present.	N/A
Layia carnosa Beach layia	FE	SE	1B.1	Mar-Jul	Coastal dunes, coastal scrub in sandy soil. Elev. 0-200 ft	**None.** No coastal dunes or scrub habitat present.	No effect. Not present.
Leptosiphon acicularis Bristly leptosiphon	--	--	4.2	Apr-Jul	Chaparral, cismontane woodland, coastal prairie, **valley and foothill grassland**. Elev. 180-4,921 ft	**None.** No *Leptosiphon* species found during botanical surveys.	N/A
Leptosiphon rosaceus Rose leptosiphon	--	--	1B.1	Apr-Jul	Coastal bluff scrub. Elev. 0-330 ft	**None.** No coastal bluff scrub habitat present.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State/CNPS**			**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Lessingia germanorum San Francisco lessingia	FE	SE	1B.1	Jun-Nov	Coastal scrub (remnant dunes). Elev. 70-360 ft	**None.** No coastal scrub habitat present.	No effect. Not present.
Lessingia hololeuca Woolly-headed lessingia	--	--	3	Jun-Oct	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, **valley and foothill grassland** in clay or serpentinite soils. Elev. 50-1,000 ft	**None.** No *Lessingia* species found during botanical surveys.	N/A
Meconella oregana Oregon meconella	--	--	1B.1	Mar-Apr	Coastal prairie and coastal scrub. Elev. 820-2,000 ft	**None.** No coastal prairie or scrub habitat present.	N/A
Micropus amphiboles Mt. Diablo cottonweed	--	--	3.2	Mar-May	Broadleafed upland forest, chaparral, cismontane woodland, **valley and foothill grassland** in rocky soil. Elev. 160-2,650 ft	**None.** No *Micropus* species found during botanical surveys.	N/A
Microseris paludosa Marsh microseris	--	--	1B.2	Apr-Jul	Closed-cone coniferous forest, cismontane woodland, coastal scrub, and **valley and foothill grassland**. Elev. 15-1,150 ft	**None.** No *Microseris* species found during botanical surveys.	N/A
Monardella antonina ssp. *antonina* San Antonio Hills monardella	--	--	3	Jun-Aug	Chaparral, cismontane woodland. Elev. 1,050-3,300 ft	**None.** No chaparral or woodland habitat present.	N/A
Monolopia gracilens Woodland woollythreads	--	--	1B.2	Feb-Jul	Openings in broadleafed upland forest, chaparral, and north coast coniferous forest. Cismontane woodland, valley and foothill grassland in serpentinite soil. Elev. 330-4,000 ft	**None.** No forest, chaparral, woodland habitat present. No serpentinite soils.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State/CNPS			Flowering Period	Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Pentachaeta bellidiflora White-rayed pentachaeta	FE	SE	1B.1	Mar-May	Cismontane woodland, **valley and foothill grassland**. Often in serpentinite soil. Elev. 120-2,000 ft	**None.** No *Pentachaeta* species found during botanical surveys.	N/A
Piperia michaelii Michael's rein orchid	--	--	4.2	Apr-Aug	Coastal bluff scrub, coastal scrub, cismontane woodland, chaparral, closed-cone coniferous forest, lower montane coniferous forest. Elev. 10-3,002 ft	**None.** No scrub, woodland, chaparral, or forest habitat present.	N/A
Plagiobothrys chorisianus var. *chorisianus* Choris' popcornflower	--	--	1B.2	Mar-Jun	Chaparral, coastal prairie, coastal scrub. Elev. 50-530 ft	**None.** No chaparral, prairie, or scrub habitat present.	N/A
Plagiobothrys diffusus San Francisco popcornflower	--	SE	1B.1	Mar-Jun	Coastal prairie, **valley and foothill grassland**. Elev. 200-1,200 ft	**None.** No *Plagiobothrys* species found during botanical surveys.	N/A
Plagiobothrys glaber Hairless popcornflower	--	--	1A	Mar-May	Meadows and seeps, marshes and swamps. Elev. 16-410 ft	**None.** No meadow, seep, marsh, or swamp habitat present.	N/A
Polemonium carneum Oregon polemonium	--	--	2B.2	Apr-Sep	Coastal prairie, coastal scrub, lower montane coniferous forest. Elev. 0-6,000 ft	**None.** No prairie, scrub or forest habitat present.	N/A

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State/CNPS**			**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Polygonum marinense Marin knotweed	--	--	3.1	Apr-Oct	Coastal salt or brackish marshes and swamps. Elev. 0-30 ft	**None.** No marshes or swamps present in BSA.	N/A
Ranunculus lobbii Lobb's aquatic buttercup	--	--	4.2	Feb-May	Cismontane woodland, north coast coniferous forest, **valley and foothill grassland**, vernal pools. Elev. 49-1,542 ft	**None.** No *Ranunculus* species found during botanical surveys.	N/A
Sanicula maritima Adobe sanicle	--	Rare	1B.1	Feb-May	Chaparral, coastal prairie, meadow and seep, **valley and foothill grassland** in clay, serpentinite soil. Elev. 100-800 ft	**None.** No *Sanicula* species found during botanical surveys.	N/A
Silene verecuda ssp. *verecuda* San Francisco campion	--	--	1B.2	Feb-Aug	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and **valley and foothill grasslands**. Elev. 100-2,100 ft	**None.** No *Silene* species found during botanical surveys.	N/A
Stebbinsoseris decipiens Santa Cruz microseris	--	--	1B.2	Apr-May	Broadleafed upland forest, Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, **valley and foothill grassland**. Elev. 30-1,640 ft	**None.** This species was not found during botanical surveys.	N/A
Streptanthus albidus ssp. *peramoenus* Most beautiful jewelflower	--	--	1B.2	Mar-Oct	Chaparral, Cismontane woodland, **valley and foothill grassland.** Elev. 310-3,300 ft	**None.** No *Streptanthus* species found during botanical surveys.	N/A
Streptanthus glandulosus ssp. *niger* Tiburon jewelflower	FE	SE	1B.1	May-Jun	**Valley and foothill grasslands** in serpentinite soil. Elev. 100-500 ft	**None.** No suitable soil type in BSA.	No effect. Not present.

Table 4. Potential for Special-Status Plants to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State/CNPS**			**Flowering Period**	**Habitat Requirements (Description from CNPS; habitats present within BSA are bolded)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Stuckenia filiformis ssp. *alpine* Slender-leaved pondweed	--	--	2B.2	May-Jul	Shallow freshwater marshes and swamps. Elev. 1,000-7,000 ft	**None.** No marsh or swamp habitat present.	N/A
Suaeda californica California seablite	FE	--	1B.1	Jul-Oct	Coastal salt marshes and swamps. Elev. 0-50 ft	**None.** No marsh or swamp habitat present.	No effect. Not present.
Symphyotrichum lentum Suisun Marsh aster	--	--	1B.2	Apr-Nov	Marshes and swamps (brackish and freshwater). Elev. 0-10 ft	**None.** No marsh or swamp habitat present.	N/A
Trifolium amoenum Two-fork clover	FE	--	1B.1	Apr-Jun	Coastal bluff scrub, **valley and foothill grassland**. Sometimes in serpentine soil. Elev. 15-1,400 ft	**None.** This species was not found during botanical surveys.	No effect. Not present.
Trifolium hydrophilum Saline clover	--	--	1B.2	Apr-Jun	Marshes and swamps, **valley and foothill grassland**, vernal pools. Mesic, alkaline sites. Elev. 0-1,000 ft	**None.** This species was not found during botanical surveys.	N/A
Triphysaria floribunda San Francisco owl's-clover	--	--	1B.2	Apr-Jun	Coastal prairie, coastal scrub, and **valley and foothill grassland**. Usually in serpentinite soil. Elev. 30-500 ft	**None.** This species was not found during botanical surveys.	N/A
Triquetrella californica Coastal triquetrella	--	--	1B.2	N/A (moss)	Coastal bluff scrub, coastal scrub. Elev. 30-350 ft	**None.** No scrub habitat present.	N/A
Viburnum ellipticum Oval-leaved viburnum	--	--	2B.3	May-Jun	Chaparral, cismontane woodland, and lower montane coniferous forest. Elev. 700-4,600 ft	**None.** No chaparral, woodland, or forest habitat present.	N/A

Notes:
FE = federally endangered
FT = federally threatened
SE = state endangered
ST = state threatened
Rare = Protected by the Native Plant Protection Act
CNPS Rare Plant Ranks

- 1A = plants presumed extirpated in California and either rare or extinct elsewhere
- 1B = plants rare, threatened, or endangered in California and elsewhere
- 2A = plants presumed extirpated in California, but common elsewhere
- 2B = plants rare, threatened, or endangered in California, but more common elsewhere
- 3 = plants about which more information is needed
- 4 = plants of limited distribution

CNPS Threat Ranks

- .1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- .3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

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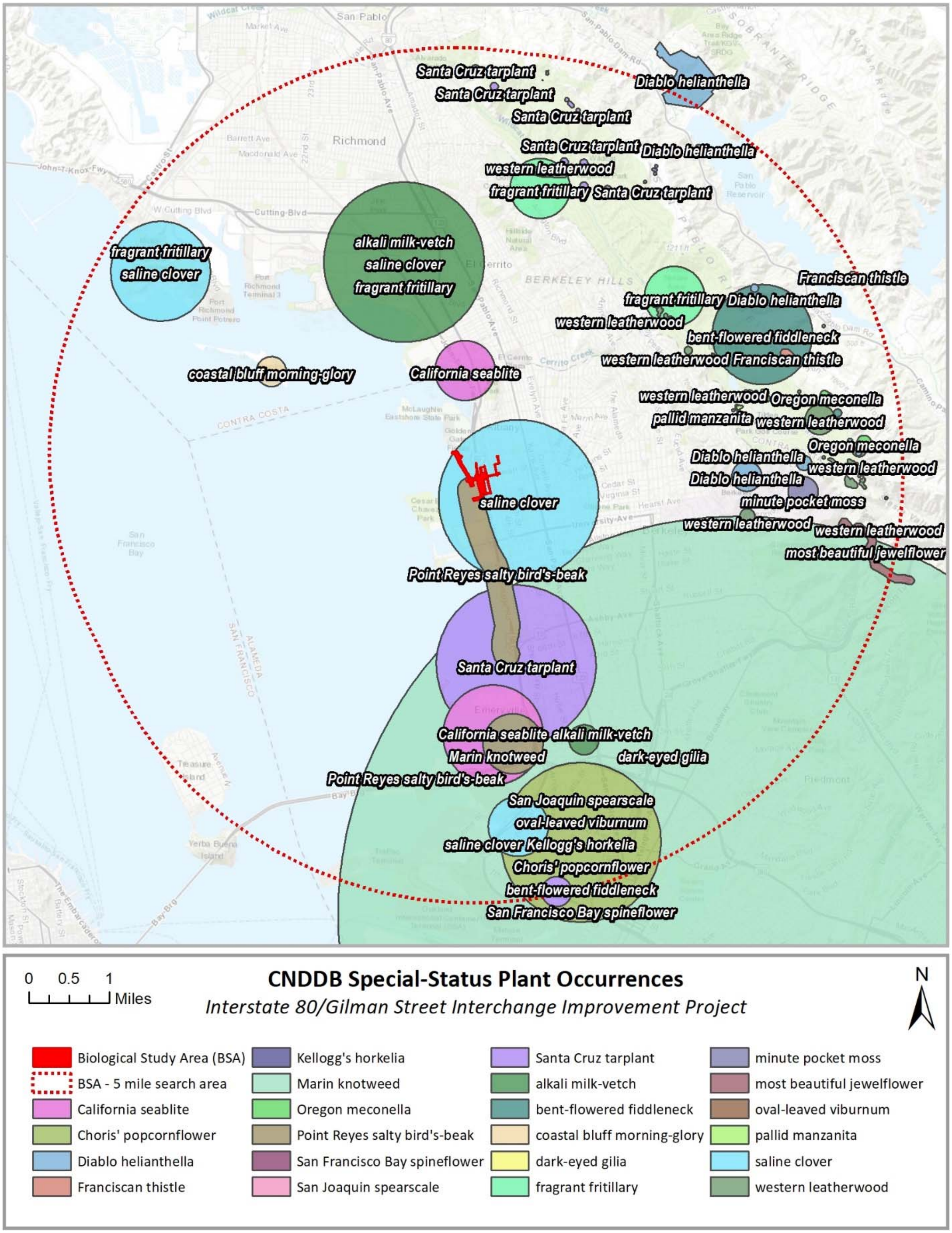

Figure 8. CNDDB Special-Status Plant Occurrences

3.2.2 Special-Status Animal Species

The CNDDB, USFWS, and NOAA Fisheries databases list a total of 66 special-status wildlife species with a potential to occur within 5 miles of the BSA. The names and legal status of each of these species are identified in Table 5 as well as a general description of the habitat requirements, whether or not suitable habitat is present in the BSA, and the potential that each species would occur in the BSA. Wildlife species with no potential to occur in the BSA are not discussed further in this NES. The database results are provided in Appendix A. See Figure 9 for special-status wildlife species that have historically been identified within a 5-mile radius of the Project.

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Invertebrates					
Haliotis cracherodii Black abalone	FE	--	Mid to low rocky intertidal areas in marine intertidal and splash zone communities	**None.** The BSA is not within the range of this species.	No effect. Not present.
Callophrys mossii bayensis San Bruno elfin butterfly	FE	--	Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Larval host plant is *Sedum spathulifolium*.	**None.** Primarily found in the vicinity of San Bruno Mountains, and no larval host plant occurs within the BSA. There are no CNDDB records within 5 miles of the BSA.	No effect. Not present.
Plebejus icarioides missionensis Mission blue butterfly	FE	--	Inhabits coastal prairie grasslands of the San Francisco Peninsula.	**None.** The BSA is not within the range of this species.	N/A
Speyeria callippe callippe Callippe silverspot butterfly	FE	--	Historically, the eastern shore of San Francisco Bay from northwestern Contra Costa County south to the Castro Valley area in Alameda County. Since 1988, it has been recorded at San Bruno Mountain and Sign Hill near South San Francisco (San Mateo County), in the hills near Pleasanton (Alameda County), at Sears Point (Sonoma County), and in the hills between Vallejo and Cordelia (USFWS 2016b). Host plant is *Viola pedunculata*. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	**None**. The BSA is not within the range of this species.	No effect. Not present.
Euphydryas editha bayensis Bay checkerspot butterfly	FT	--	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay.	**None.** Suitable habitat is not present within the BSA.	No effect. Not present.
Fish					

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Acipenser medirostris Green sturgeon – southern DPS	FT	--	These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, & Trinity Rivers.	**Low.** Critical habitat is present within the BSA, but suitable sturgeon habitat within the BSA is small in area. There are no records of this species in CNDDB.	May affect, but not likely to adversely affect.
Oncorhynchus kisutch Coho salmon – Central California Coast ESU	FE	SE	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	**None.** Only two creeks that flow into north central San Francisco Bay, Arroyo Corte Madera del Presidio and Corte Madera (Marin County), currently support coho salmon. Individuals migrating to or from these creeks would likely transit through the north side of the Central Bay[2], and are unlikely to be present in the BSA.	No effect. Not present.
Oncorhynchus mykiss irideus Steelhead – central California coast DPS	FT	--	From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	**Low.** The BSA is within the spawning range of this DPS, and critical habitat is present within the BSA. However, there are no occurrences of steelhead in CDFW's Bay Study trawl data from 1980 through 2012 in San Francisco Bay near the BSA.	May affect, but not likely to adversely affect.

[2]NOAA Fisheries. 2001. Biological Opinion. San Francisco- Oakland Bay Bridge East Span Seismic Safety Project. 1514222-SWR99-SR-190.

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State**		**Habitat Requirements (Descriptions from CNDDB)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Oncorhynchus mykiss irideus Steelhead –Central Valley DPS	FT	--	Populations in the Sacramento and San Joaquin rivers and their tributaries.	**Low.** Critical habitat is present within the BSA, but the BSA is not within the spawning range of this DPS. As an anadromous fish, this DPS occurs in San Francisco Bay when migrating to natal spawning streams in the Central Valley.	May affect, but not likely to adversely affect.
Oncorhynchus tshawytscha Chinook salmon – Central Valley spring run ESU	FT	ST	Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures above 27 C are lethal to adults.	**Low.** The BSA is not within the spawning range of this ESU. However, as an anadromous fish, this ESU may occur in San Francisco Bay when migrating to natal spawning streams in the Central Valley. A single chinook was observed in Codornices Creek in 2012[3].	May affect, but not likely to adversely affect.
Oncorhynchus tshawytscha Chinook salmon – Sacramento River winter run ESU	FE	SE	Sacramento River below Keswick Dam. Spawns in the Sacramento River, but not in tributary streams.	**Low.** Critical habitat is present within the BSA, but the BSA is not within the spawning range of this ESU. However, as an anadromous fish, this ESU occurs in San Francisco Bay when migrating to natal spawning streams in the Sacramento River. A single chinook was observed in Codornices Creek in 2012[4].	May affect, but not likely to adversely affect.

[3] Bay Nature. 2012. "Chinook salmon sighted in Berkeley creek." https://baynature.org/article/chinook-salmon-sighted-in-berkeley-creek/
[4] Bay Nature. 2012. "Chinook salmon sighted in Berkeley creek." https://baynature.org/article/chinook-salmon-sighted-in-berkeley-creek/

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Hypomesus transpacificus Delta smelt	FT	SE	Occur in Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay in aquatic estuaries with salinity ranging from 2 to 10 parts per trillion.	**None.** The BSA is within the historic range of this species, but there are no CNDDB records within a 5 miles radius of the BSA.	No effect. Not present.
Sprinchus thaleichthys Longfin smelt	FC	ST, SSC	Found in open waters of estuaries, mostly in middle or bottom of water column. During summer, found in mid- to low-water column in deep cool water in the central San Francisco Bay. During fall, migrates into low salinity or freshwater reaches of coastal rivers and tributary streams to spawn[5]. Prefer salinities of 15-30 parts per thousand but can be found in completely freshwater to almost pure seawater.	**None.** Juveniles disperse toward more-saline and deeper-water habitats, whereas mature longfin smelt require cool to cold freshwater habitats for spawning[6]. Longfin smelt are netted more frequently in otter trawls off the floor of the San Francisco Bay than mid-water trawls. Thus, there is no suitable summer or spawning habitat present, because estuarine habitat within the BSA is a shallow nearshore environment. However, there is a single CNDDB record (#24) for numerous specimens collected between 1913-2001 between Alameda and Point San Pedro; a small portion of this occurrence is within the BSA, but not within the Project footprint.	N/A

[5] The Bay Institute, Center for Biological Diversity, Natural Resources Defense Council. 2007. Petition to the State of California Fish and Game Commission and Supporting Information for Listing the Longfin Smelt (*Spirinchus Thaleichthys*) As an Endangered Species Under the California Endangered Species Act. https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/sfwc/spprt_docs/sfwc_exh3_bayinstitute_2007.pdf

[6] CDFW. 2009b. Report to the Fish and Game Commission, A Status Review of the Longfin Smelt (Spirinchus thaleichthys) In California. 22 p.

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Thaleichthys pacificus Eulachon	FT	--	Spawn in the lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.	**None.** The BSA is not within the range of this species[7]. There are no CNDDB records within 5 miles of the BSA.	No effect. Not present.
Archoplites interruptus Sacramento perch	--	SSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley.	**None.** The BSA is not within the current range of this species and there is no suitable habitat within the BSA.	N/A
Eucyclogobius newberryi Tidewater goby	FE	SSC	Occurs in small coastal lagoons, lower reaches of streams, and uppermost portions of large bays[8] from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River, Del Norte County. Found in shallow lagoons and lower stream reaches, they need fairly still, but not stagnant water and high oxygen levels. They rarely move into marine or freshwater habitat.	**None.** There is no suitable habitat within the BSA. The BSA is within the central portion of San Francisco Bay, which can experience wind swells that result in choppy to rough sea conditions. The only CNDDB record (#21) within 5 miles of the BSA is for an extirpated population that resided in the Berkeley Aquatic Park.	No effect. Not present.
Amphibians					
Ambystoma californiense California tiger salamander	FT	ST, SSC	Cismontane woodland, meadows and seeps, riparian woodland, valley and foothill grassland, vernal pool, and wetlands. Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	**None.** No suitable habitat present within the BSA. No CNDDB records within 5 miles of the BSA.	No effect. Not present.

[7] NOAA Fisheries. 2008. Summary of Scientific Conclusions of the Review of the Status of Eulachon (*Thaleichthys pacificus*) in Washington, Oregon, and California. http://www.westcoast.fisheries.noaa.gov/publications/status_reviews/other_species/eulachon/eulachon-review.pdf

[8] NatureServe. 2014. Eucyclogobius newberryi. The IUCN Red List of Threatened Species 2014: e.T8165A18233437. http://dx.doi.org/10.2305/IUCN.UK.2014-3.RLTS.T8165A18233437.en. Downloaded on 27 April 2018.

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Dicamptodon ensatus California giant salamander	--	SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County.	**None.** No suitable habitat present within the BSA. No CNDDB records within 5 miles of the BSA.	N/A
Rana boylii Foothill yellow-legged frog	--	SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	**None.** There is no suitable habitat within the BSA. There are no CNDDB records within 5 miles of the BSA.	N/A
Rana draytonii California red-legged frog	FT	SSC	Occurs in a variety of ponds, sloughs, low-gradient streams, and low-salinity lagoons. Adults may forage in, and migrate through, terrestrial grasslands, riparian woodlands, and forests, but require weedy, slow moving or standing water that persists through most of the dry season for successful reproduction. Introduced bullfrogs and predatory fish are implicated in the decline of red-legged frogs throughout their range.	**None**. Codornices Creek is not considered to be suitable habitat for this species and these frogs were not observed during USFWS protocol surveys performed by others[9]. There are no other aquatic features with suitable habitat within the BSA. There is one CNDDB record (#1,113) within 5 miles of the BSA for an adult frog observed near San Pablo Dam.	No effect. Not present.
Reptiles					
Emys marmorata Western pond turtle	--	SSC	A thoroughly aquatic turtle found in ponds, marshes, rivers, streams, and irrigation ditches.	**Low.** There is suitable habitat along Codornices Creek, but there are no CNDDB records of these turtles in Codornices Creek. However, the potential for these turtles to disperse along Codornices Creek could not be ruled out entirely.	N/A

[9] City of Albany. 2004. Codornices Creek Improvements Plan, Draft Initial Study and Proposed Mitigated Negative Declaration. http://s3-us-west-2.amazonaws.com/ucldc-nuxeo-ref-media/23ba19c6-f3b3-4b97-aeda-2edfc7e79b2f

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State**		**Habitat Requirements (Descriptions from CNDDB)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Lepidochelys olivacea Olive ridley sea turtle	FE/FT	--	The olive ridley is mainly a pelagic sea turtle, but has been known to inhabit coastal areas, including bays and estuaries. They are omnivorous, feeding on algae, lobster, crabs, tunicates, mollusks, shrimp, and fish.[10]	**None.** Coastal habitat within the BSA is small in area and consists of sandy shallows. Although olive ridleys are infrequently observed along the California coastline[11], it is highly unlikely that this species would occur in the BSA.	No effect. Not present.
Caretta caretta North Pacific loggerhead sea turtle	FT	--	Loggerheads occur throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. Nest on high energy, relatively narrow, steeply sloped, coarse-grained ocean beaches. Most observations in the eastern Pacific Ocean are records of juveniles off the coast of California.[12]	**None.** Coastal habitat within the BSA is small in area and consists of sandy shallows. Although loggerhead turtles are occasionally observed in the San Francisco Bay, it is highly unlikely that this species would occur in the BSA.	No effect. Not present.
Chelonia mydas East Pacific green sea turtle	FT	--	Marine. Completely herbivorous; needs adequate supply of seagrasses and algae.	**None.** No suitable marine habitat with an adequate supply of seagrass and algae is present within the BSA. No CNDDB records within 5 miles of the BSA.	No effect. Not present.

[10] NOAA Fisheries. 2018a. Olive Ridley Turtle. http://www.nmfs.noaa.gov/pr/species/turtles/oliveridley.html
[11] Bay City News, 2015. "Turtle native to Mexican, Central American coasts seen in Bay Area." http://abc7news.com/news/turtle-native-to-mexican-central-american-coasts-seen-in-bay-area/1141678/
[12] NOAA Fisheries. 2018b. Loggerhead Turtle. http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.html

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Dermochelys coriacea Leatherback sea turtle	FE	--	Leatherbacks are mainly a pelagic (open ocean) species, but they also forage in coastal waters. Eats soft-bodied animals, such as jellyfish and salps, and pyrosomes.[13] Often seen feeding on jellyfish in the shipping lanes outside the Golden Gate.[14]	**None.** Coastal habitat within the BSA is small in area, and there is no suitable pelagic habitat present within the BSA. However, vagrants could enter San Francisco Bay and occur in the vicinity of the BSA.	No effect. Not present.
Masticophis lateralis euryxanthus Alameda whipsnake	FT	ST	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna, and woodland habitats.	**None.** No chaparral and scrub habitats within or adjacent to the BSA. There are numerous CNDDB records within 5 miles of the BSA, but most are in the hills to the east.	No effect. Not present.
Birds					
Branta bernicla Brant	--	SSC (winter and staging)	Requires well-protected, shallow marine waters with intertidal eelgrass beds, primarily within bays and estuaries. At high tide they need sheltered open water or protected beaches for loafing. Distribution is closely tied to abundance of eelgrass. Brant often feed close to mudflats, sandbars or spits used as gritting sites.	**Moderate.** There are no records for this species in CNDDB. However, eelgrass beds are located just beyond the limits of the BSA, and brant are known to occur along the eastern shore of San Francisco Bay[15]. There is potential for brant to roost or loaf along the shoreline within the BSA.	N/A

[13] NOAA Fisheries. 2018c. Leatherback Turtle. http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.html

[14] Fimrite, P. 2013. “Leatherback turtle sanctuary set up on West Coast.” https://www.sfgate.com/outdoors/article/Leatherback-turtle-sanctuary-set-up-on-West-Coast-2664342.php

[15] McDonald, A. 2015. eBird Checklist: https://ebird.org/view/checklist/S22451030. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 20, 2018).

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State**		**Habitat Requirements (Descriptions from CNDDB)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Circus cyaneus Northern harrier	--	SSC	Coastal salt & fresh-water marsh. Nest & forage in **grasslands**, from salt grass in desert sink to mountain swamps or wetlands. Nests on ground in shrubby vegetation, usually at marsh edge; nests are built of a large mound of sticks in wet areas.	**Moderate.** The nearest CNDDB record (#5) is for a nest approximately 0.5 miles south of the BSA within McLaughlin Eastshore State Park in 2002. Additionally, there is a more recent record for a nesting pair in the same area from 2008[16]. Although harriers may nest near the BSA, there is no suitable nesting habitat within the BSA.	N/A
Elanus leucurus White-tailed kite	--	FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Moderate.** Frequently observed near McLaughlin Eastshore State Park and have been documented nesting in the vicinity of the BSA[17]. The nearest CNDDB occurrence (#59) was approximately 0.5 miles southwest within the Berkeley Marina in 1994.	N/A
Aquila chrysaetos Golden eagle	--	FP	Nest in rolling foothills, mountain areas, sage-juniper flats, and deserts. Nest in cliff-walled canyons, also large trees in open areas.	**None.** No suitable nesting habitat in BSA or its vicinity.	N/A
Haliaeetus leucocephalus Bald eagle	--	SE, FP	Nests in large, old-growth, or dominant live trees with open branches, especially ponderosa pine.	**None.** No suitable nesting habitat in BSA or its vicinity.	N/A

[16] Lewis, R. 2008. eBird Checklist: https://ebird.org/view/checklist/S22937818. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).
[17] Strauss, E. 2017. eBird Checklist: https://ebird.org/view/checklist/S39789695. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State**		**Habitat Requirements (Descriptions from CNDDB)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Falco pereginus anatum American peregrine falcon	--	FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dune, mounds; also, human-made structures.	**Moderate**. Falcons are regularly observed along the eastern shore of San Francisco Bay, including the waterfront near Gilman Street[18]. Falcons could roost in buildings or other tall structures in the vicinity of the BSA, such as the San Francisco-Oakland Bay Bridge, but nesting within the BSA is not likely.	N/A
Asio flammeus Short-eared owl	--	SSC	Nests in freshwater and saltwater swamp lands, lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion.	**Low.** No marshland with tall vegetation to provide secluded nesting habitat in or directly adjacent to the BSA. There are no CNDDB records within 5 miles of the BSA. However, these owls have been documented in McLaughlin Eastshore State Park and Point Isabel Regional Shoreline during winter[19], suggesting that the primary habitat use is for wintering rather than nesting.	N/A

[18] Maizlish, A. 2013a. eBird Checklist: https://ebird.org/view/checklist/S15205583. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).
[19] eBird. 2012. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Athene cunicularia Burrowing owl	--	SSC (nesting)	Open, dry annual or perennial grassland, deserts and scrublands characterized by low-growing vegetation.	**None.** These owls have been documented overwintering in the rip rap along the shoreline near Gilman Street[20] as well as the Tom Bates Sports Complex and Cesar E. Chavez Park[21]. However, only nesting burrowing owls are designated as SSC, and nesting burrowing owls are not anticipated to occur in the BSA.	N/A
Laterallus jamaicensis coturniculus California black rail	--	ST, FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes border larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**None**. No marshes with suitable nesting habitat present in or near the BSA.	N/A
Rallus longirostris obsoletus Ridgway's rail	FE	SE, FP	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	**None**. No marshes with suitable nesting habitat present in or near the BSA.	No effect. Not present.
Coturnicops noveboracensis Yellow rail	--	SSC	Freshwater marshlands. Summer resident in eastern Sierra Nevada in Mono County.	**None.** No suitable freshwater marsh habitat present within the BSA. No CNDDB records within 5 miles of the BSA.	N/A

[20] Maizlish, A. 2013b. eBird Checklist: https://ebird.org/view/checklist/S16149460. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).
[21] Golden Gate Audubon Society. 2018. Burrowing Owls on the East Shore of San Francisco Bay. https://goldengateaudubon.org/conservation/burrowing-owls/

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Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Charadrius nivosus ssp. *nivosus* Western snowy plover	FT	SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**Low.** Suitable nesting habitat is not present, but these birds may occasionally forage within the BSA during low tides. There are several records of plovers in McLaughlin Eastshore State Park, Berkeley Marina, and Albany Mudflats[22]; there are no CNDDB records within 5 miles of the BSA.	No effect. No potential for take.
Sternula antillarum browni California least tern	FE	SE, FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Low**. Marginal suitable nesting habitat is present, but the area is too frequently disturbed by human recreational use for birds to nest there. However, these terns may occasionally forage within or near the BSA. There are several records of terns in McLaughlin Eastshore State Park, Berkeley Marina, and Albany Mudflats[23].	No effect. No potential for take.

[22] eBird. 2012. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).

[23] eBird. 2012. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).

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Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Coccyzus americanus Yellow-billed cuckoo	FT	SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often misted with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**None.** No suitable riparian habitat within the BSA. There are no CNDDB records within 5 miles of the BSA. However, there is a report of a single cuckoo in Richmond in 1998[24], suggesting there is a small potential for vagrant cuckoos to occur in the vicinity of the BSA.	No effect. Not present.
Riparia riparia Bank swallow	--	ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Nests in vertical banks and cliffs with fine textured sandy soil.	**None.** No suitable nesting habitat present.	N/A
Geothlypis trichas sinuosa Saltmarsh common yellowthroat	--	SSC	Inhabits fresh and salt water marshes of the San Francisco Bay Region. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, and willows for nesting.	**Low**. Could nest within the western limits of the BSA, adjacent to San Francisco Bay. The nearest CNDDB record (#81) from 1989 is located approximately 4 miles south, near the I-80 toll plaza.	N/A
Melospiza melodia maxillaris Suisun song sparrow	--	SSC	Resident of brackish-water marshes surrounding Suisun Bay.	**None.** No suitable marsh habitat present within the BSA. No CNDDB records within 5 miles of the BSA.	N/A

[24] Glover, S. 1998. eBird Checklist: https://ebird.org/view/checklist/S28377116. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).

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Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Melospiza melodia pusillula Alameda song sparrow	--	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* (pickleweed) marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in pickleweed.	**Low**. Could occur within the western limits of the BSA, adjacent to the San Francisco Bay. There are six CNDDB records within a 5 miles radius of the BSA. The nearest CNDDB record (#20) is from 1942 and approximately 1 mile to the south, west of the Berkeley Aquatic Park.	N/A
Melospiza melodia samuelis San Pablo song sparrow	--	SSC	Resident of salt marshes along the north side of San Francisco and San Pablo bays.	**None.** No suitable marsh habitat present within the BSA. The nearest CNDDB record (#29) is just over 5 miles from the BSA.	N/A
Xanthocephalus xanthocephalus Yellow-headed blackbird	--	SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds.	**None.** No suitable nesting habitat present within the BSA. No CNDDB records within 5 miles of the BSA; however, two blackbirds were observed in the Albany portion of McLaughlin Eastshore State Park in 2015[25].	N/A
Mammals					
Scapanus latimanus parvus Alameda Island mole	--	SSC	Known only to occur on Alameda Island.	**None.** The BSA is not within the range of this species.	N/A
Sorex vagrans halicoetes Salt-marsh wandering shrew	--	SSC	Marshes, swamps, and wetlands of the south arm of the San Francisco Bay. Occur in medium high marsh 6-8 feet above sea level where abundant driftwood is scattered along pickleweed.	**None.** The BSA is not within the range of this species.	N/A

[25] Bouton, J., Tiller, L. 2015. eBird Checklist: https://ebird.org/view/checklist/S25145350. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: April 12, 2018).

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State**		**Habitat Requirements (Descriptions from CNDDB)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Antrozous pallidus Pallid bat	--	SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rock areas for roosting. Very sensitive to disturbance of roosting sites. Also known to roost in crevices of bridges and buildings.	**Low.** There are several CNDDB records within 5 miles of the BSA for bats included in the Museum of Vertebrate Zoology. All of the collections were from the 1940s.	N/A
Corynorhinus townsendii Townsend's big-eared bat	--	SSC	Roosts in man-made structures such as old buildings and bridge crevices.	**Low**. Although suitable roosting habitat in the form of old buildings and bridge crevices are present in the BSA, this species is highly sensitive to human disturbance. The nearest CNDDB record (#293) is 4.5 miles east of the BSA for specimens collected in Strawberry Canyon in 1938.	N/A
Lasiurus blossevillii Western red bat	--	SSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Low**. These bats could roost in tall trees within the BSA, particularly along Codornices Creek; however, there are no CNDDB records within 5 miles of the BSA.	N/A
Nyctinomops macrotis Big free-tailed bat	--	SSC	Low-lying arid areas in Southern California.	**None.** The BSA is not within the range of this species. However, there is a single CNDDB record (#22) for a specimen at the Museum of Vertebrate Zoology that was collected in 1916.	N/A
Microtus californicus sanpabloensis San Pablo vole	--	SSC	Salt marshes of San Pablo Creek, on the south shore of San Pablo Bay.	**None.** The BSA is not within the range of this species.	N/A

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name **Common Name**	**Status Fed/State**		**Habitat Requirements (Descriptions from CNDDB)**	**Potential to Occur within the BSA**	**Effect Finding for Federally Listed Species**
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	--	SSC	Forest habitats of moderate canopy & moderate to dense understory. May prefer chaparral & redwood habitats.	**None.** This species has potential to occur along the riparian corridor of Codornices Creek. Disturbance from homeless population in the creek limits habitat suitability. No CNDDB records within 5 miles of the BSA.	N/A
Reithrodontomys raviventris Salt-marsh harvest mouse	FE	SE, FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat.	**None**. No saline emergent wetlands are present in or near the vicinity of the BSA.	No effect. Not present.
Zapus trinotatus orarius Point Reyes jumping mouse	--	SSC	Primarily in bunch grass marshes on the uplands of Point Reyes. Also present in coastal scrub, grassland, and meadows.	**None.** There is no suitable habitat present within the BSA. There are no CNDDB records within 5 miles of the BSA.	N/A
Arctocephalus townsendii Guadalupe fur seal	FT	ST	Breeds on Isla de Guadalupe off of Mexico, occasionally found on San Miguel, San Nicolas, and San Clemente islands. Prefers shallow, nearshore island water, with cool and sheltered rocky areas for haul-outs.	**None.** There is no suitable habitat present within the BSA. There are no CNDDB records within 5 miles of the BSA.	No effect. Not present.
Enhydra lutris nereis Southern sea otter	FT	FP	Nearshore marine environments from approximately Ano Nuevo, San Mateo County to Point Sal, Santa Barbara County.	**None.** The BSA is not within the range of this species.	No effect. Not present.
Taxidea taxus American badger	--	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	**None**. There is no suitable habitat present within the BSA.	N/A

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Balaenoptera musculus Blue whale	FE	--	Found worldwide, from sub-polar to sub-tropical latitudes. Although blue whales are found in coastal waters, they are thought to occur generally more offshore than other whales.[26]	**None.** There is no suitable habitat present within the BSA.	No effect. Not present.
Balaenoptera physalus Fin whale	FE	--	Deep, offshore waters of major oceans, primarily in temperate to polar latitudes. Less common in the tropics.[27]	**None.** There is no suitable habitat present within the BSA.	No effect. Not present.
Balaenoptera borealis Sei whale	FE	--	Wide distribution in subtropical, temperate, and subpolar waters. Typically observed in deeper waters far from the coastline.[28]	**None.** There is no suitable habitat present within the BSA.	No effect. Not present.
Megaptera novaeangliae Humpback whale	FE	--	Found worldwide. The Mexican population breeds along the Pacific coast of Mexico and feeds from California to the Aleutian Islands. The Central American population breeds along the Pacific coast of Central America and feeds off California and Oregon.[29]	**None.** There is no suitable habitat present within the BSA.	No effect. Not present.
Eubalaena japonica North Pacific right whale	FE	--	Historically occurred in all oceans from temperate to subpolar latitudes. Contemporary sightings have mostly occurred in the central North Pacific and Bering Sea.[30]	**None.** There is no suitable habitat present within the BSA.	No effect. Not present.

[26] NOAA Fisheries. 2016. Blue Whale (*Balaenoptera musculus*). http://www.nmfs.noaa.gov/pr/species/mammals/whales/blue-whale.html
[27] NOAA Fisheries. 2018d. Fin Whale. https://www.fisheries.noaa.gov/species/fin-whale
[28] NOAA Fisheries. 2018e. Sei Whale. https://www.fisheries.noaa.gov/species/sei-whale
[29] NOAA Fisheries. 2018f. Humpback Whale. https://www.fisheries.noaa.gov/species/humpback-whale
[30] NOAA Fisheries. 2018g. North Pacific Right Whale. https://www.fisheries.noaa.gov/species/north-pacific-right-whale

Table 5. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Fed/State		Habitat Requirements (Descriptions from CNDDB)	Potential to Occur within the BSA	Effect Finding for Federally Listed Species
Orcinus orca Southern resident killer whale	FE	--	Found in all oceans. Most abundant in colder waters, they are also found in tropical and subtropical waters. Resident killer whales have been seen from California to Russia.[31]	**None.** There is no suitable habitat present within the BSA.	No effect. Not present.
Physeter macrocephalus Sperm whale	FE	--	Occur in all deep oceans, from the equator to the edge of the pack ice in the Arctic and Antarctic. Distribution is dependent on food source and suitable conditions for breeding.[32]	**None.** There is no suitable habitat present within the BSA.	No effect. Not present.

Notes:
DPS = distinct population segment
ESU = evolutionary significant unit
FE = federally endangered
FT = federally threatened
SE = state endangered
ST = state threatened
SSC = California Species of Special Concern
FP = fully protected

[31] NOAA Fisheries. 2018h. Killer Whale. https://www.fisheries.noaa.gov/species/killer-whale
[32] NOAA Fisheries. 2018i. Sperm Whale. https://www.fisheries.noaa.gov/species/sperm-whale

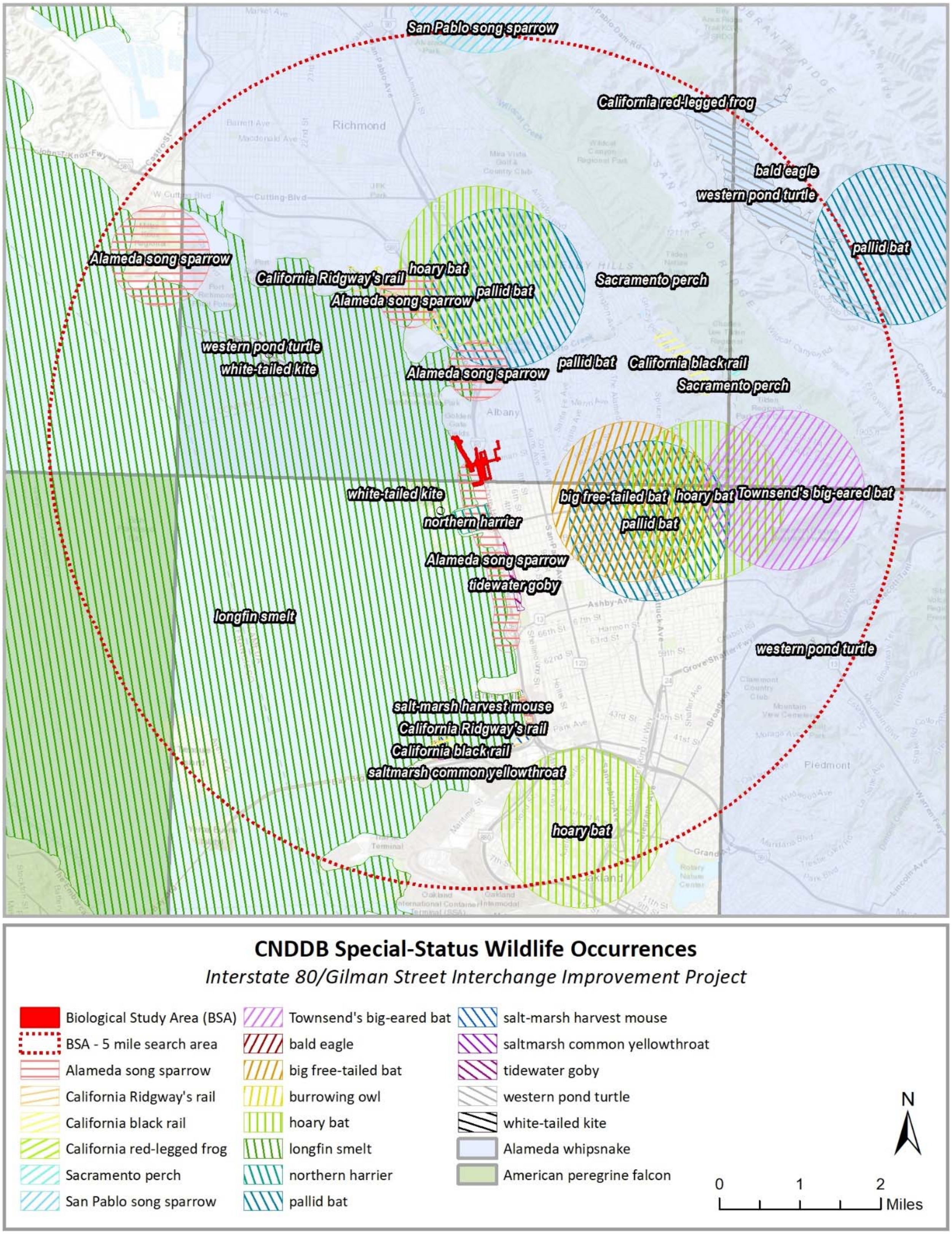

Figure 9. CNDDB Special-Status Wildlife Occurrences

3.2.3 Habitats and Natural Communities of Concern

Natural communities are recurring associations of plants and animals found in particular locations with specific physical conditions. Natural communities of special concern are associates of plants and animals that may have high species diversity, high productivity, limited distribution, decreasing range, or unusual character. A few examples include wetlands, creeks, riparian habitat, and estuaries. The CNDDB contains a list of sensitive natural communities throughout the state, including those in close proximity to the BSA.

Wetlands and "Waters of the United States" are considered sensitive by both federal and State agencies, and they are protected by the CWA. Jurisdictional wetlands and "Waters of the United State" are discussed in Section 4.1.2 of this NES, as well as within the Wetland Delineation Report (WRECO 2016; Appendix D) and Wetland Delineation Report Addendum (Johnson-Marigot Consulting 2018; Appendix E).

Critical habitat is designated by the USFWS and NOAA Fisheries to protect areas that are essential to the survival of federally listed species of plants and wildlife. San Francisco Bay and its shoreline provides habitat for federally listed species. Critical habitat for the following federally-listed wildlife species is present within the BSA:

- Steelhead (California Central Valley DPS)
- Steelhead (Central California Coast DPS)
- Chinook (Sacramento River Winter Run ESU)
- Green sturgeon (estuarine)

Essential Fish Habitat is present within the BSA. The entirety of San Francisco Bay is classified as Essential Fish Habitat for species managed under the Pacific Coast Salmon Fishery Management Plan (coho and chinook salmon) and also for species managed under the Coastal Pelagic Species Fishery Management Plan and Pacific Coast Groundfish Fishery Management Plan. Essential Fish Habitat is protected by the Magnuson-Stevens Fishery Conservation and Management Act, which is administered by NOAA Fisheries.

Additionally, the western extent of the BSA is located along the shoreline of San Francisco Bay. BCDC, pursuant to the McAteer-Petris Act, has authority over coastal resources within 100 feet of the shoreline of San Francisco Bay, the bay itself, tidally-influenced creeks and rivers, and Suisun Marsh to the northeast of the BSA.

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

This chapter describes the habitats and natural communities of concern as well as the special-status plant and animal species that were observed or were determined to have the potential to occur in the BSA. In general, the proposed Project will have few impacts on the natural environment because the Project would predominantly occur within a developed footprint. However, a small portion of the BSA falls within the waters and along the shoreline of San Francisco Bay as well as the riparian corridor of Codornices Creek. These areas have potential to contain special-status species, but construction-related disturbances in these areas would either be avoided (Codornices Creek) or limited in size and scope (San Francisco Bay) and any impacts in these areas resulting from the Project would be avoided or minimized. Project features that protect water quality and the natural environment would be incorporated into the contract documents. These Project features would reduce impacts on habitats and protected species. Additionally, Project-specific avoidance and minimization measures (AMMs) would be implemented to protect sensitive natural resources from Project activities. Table 6 presents the standard project features that would be implemented by the Contractor. Table 7 lists the project-specific AMMs that would be incorporated into the construction of the Project.

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Table 6. Project Features

Project Feature	Description
Comply with Regulatory Agency Permits and Approvals	• A copy of all relevant permits will be included within the construction bid package of the proposed Project. The Resident Engineer or designee will be responsible for implementing the conditions of all biological resources permits. • The names and qualifications of biological monitors will be submitted for (agency) approval prior to initiating construction activities. • Caltrans and Agency-approved biologists will be onsite during work within San Francisco Bay, including installation and removal of the cofferdam as well as the installation of the flap gate on the 60-inch culvert, or as otherwise required by regulatory agency permits and approvals.
Protect Environmentally Sensitive Areas	• Adjacent to the riparian area along Codornices Creek and San Francisco Bay, Project limits with be delineated with high-visibility fencing to avoid ground disturbance adjacent to work and access areas. • Trees, shrubs, and native vegetation will be preserved in place to the extent practicable. • All spoils, excavated materials, and plant materials will be disposed at a licensed and approved facility. • The work in San Francisco Bay would be limited to the smallest area possible to complete the proposed construction activities.
Provide Environmental Awareness Training	Before Project activities, a qualified Caltrans-approved biologist will conduct an education program for all Project personnel. Species to be covered will include but are not limited to: green sturgeon, special-status salmonids, brant, western snowy plover, California least tern, bats, and nesting birds. The program will include: • Information on the protected species and the habitats likely to be found within the BSA. • Requirements of federal and state laws pertaining to these species. • Identification of measures implemented to conserve the species and habitats within the Project area. • Distribution of a fact sheet conveying this information to the personnel who may enter the BSA.
Implement Project Site Best Management Practices	• Access routes and the number and size of staging, access and work areas will be limited to existing paved, graveled, or other previously compacted surfaces as identified in the Project plans. Movement of heavy equipment to and from the site will be restricted to established roadways. • Routes and boundaries will be clearly marked prior to initiating ground disturbance. • All food and food-related trash items such as wrappers, cans, bottles, and food scraps must be disposed of in securely closed containers and removed once a week from a construction or Project site. • No pets, such as dogs or cats, owned by Project personnel will be allowed anywhere in the BSAs during work to prevent harassment, mortality of special-status species, or destruction of habitat. • All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents, and a Spill Response Plan will be prepared. • Hazardous materials such as fuels, oils, and solvents will be stored in sealable containers in a designated location that is at least 100 ft from aquatic habitats and storm drain inlets. • No firearms will be allowed except for those carried by authorized security personnel, or local, state or federal law enforcement officials.

Table 6. Project Features

Project Feature	Description
Replant, Reseed and Restore Disturbed Areas	Disturbed areas will be restored with the following methods: • All slopes or unpaved areas temporarily affected by the proposed Project will be restored to original topography and stabilized with effective erosion control materials. • Slopes and bare ground will be reseeded with native plant seed mix to stabilize and prevent erosion, where appropriate.
Control Invasive Weeds	• In the event that species ranked by the California Invasive Plant Council as medium- or high-priority invasive weeds are disturbed or removed during construction-related activities, the Contractor will contain the plant material and dispose of it in a manner that will not promote the spread of the species. The Contractor will be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with a local native seed mix. If seeding is not possible, the area will be covered to the extent practicable with heavy, black plastic solarization material until the end of the Project. The Project will be managed to reduce and minimize the propagation of invasive weeds.
Protect Water Quality	• The potential for adverse effects to water quality will be avoided by implementing temporary and permanent best management practices (BMP) outlined in the Caltrans *Construction Site Best Management Practices Manual* (Caltrans 2017). Caltrans erosion-control BMPs will be used to minimize any wind- or water-related erosion. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges. Protective measures will be included in the contract documents, including, at a minimum: • No discharge of pollutants from vehicles and equipment cleaning will be allowed into the storm drain or water courses. • Vehicle and equipment fueling and maintenance operations must be at least 50 ft away from water courses and storm drain inlets. • Dust control will be implemented, including the use of water trucks and tackifiers to control dust in excavation and fill areas, applying drain rock to temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require. • Work areas where temporary disturbance has removed the pre-existing vegetation will be restored and re-seeded with a native seed mix. • Graded areas will be protected from erosion using a combination of silt fences, biodegradable fiber rolls along the toe of slopes or along edges of designated staging areas, and erosion-control biodegradable netting such as jute or coir, as appropriate. Biodegradable fiber rolls will be installed along or at the base of slopes during construction to capture sediment, and temporary organic hydromulching will be applied to all unfinished disturbed and graded areas. • A water quality inspector will inspect the site after before and after a rain event to ensure that stormwater BMPs are adequate. • A cofferdam and dewatering would be used to minimize increases in sediment transport and turbidity during work performed within San Francisco Bay. Cofferdams would conform to Caltrans 2015 Standard Specifications Section 19-3.01 and dewatering would be in accordance with “Caltrans Storm Water Quality Handbooks, March 1, 2003” Section 7: Construction Site Best Management Practices Manual - Clear Water Diversion NS-5. If surface water or groundwater inflows are present, a dewatering system would be installed in order to perform work within the cofferdam.

Table 6. Project Features

Project Feature	Description
Monitor Water Quality	• Turbidity monitoring would be performed during and after installation and removal of the cofferdam as well as during dewatering activities according to Standard Specification 13-1.01D(5)(b) Water Quality Sampling and Analysis. Water quality monitoring would be performed to document changes in turbidity in compliance with water quality standards, permits, and approvals from NOAA Fisheries and/or CDFW. If the water quality monitor observes excursions of turbidity beyond 50 NTU or as otherwise specified in regulatory agency permits and approvals, the water quality monitor would notify the Resident Engineer. The Resident Engineer has the authority to stop all construction work on the site until the appropriate corrective measures have been conducted. Work would resume once it is determined that water quality standards would not be violated.

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Table 7. Avoidance and Minimization Measures

AMM	Description
Conduct Pre-construction Surveys and Biological Monitoring	• Pre-construction surveys for nesting birds will be conducted by a qualified Caltrans-approved biologist no more than 72 hours prior to commencing construction activities during the nesting season (February 1 to September 30). Surveys will cover any potential nesting substrates within 300 feet of construction activity. If an active nest is found during surveys, the qualified Caltrans-approved biologist (who shall be knowledgeable about the behavior of nesting birds) shall consult with CDFW and/or USFWS regarding appropriate action to comply with State and federal laws. Active nest sites shall be designated as “Environmentally Sensitive Areas” (ESA) and protected (while occupied) during Project construction with the installation of a high-visibility fence barrier surrounding each nest site or other appropriate markers. A qualified Caltrans-approved biologist shall develop buffer recommendations that are site specific and at an appropriate distance, that protects normal bird behavior to prevent nesting failure or abandonment. The buffer distance recommendation should be developed after field investigations that evaluate the bird(s) apparent distress in the presence of people or equipment at various distances and shall be approved by CDFW and/or USFWS. The qualified Caltrans-approved biologist shall monitor the behavior of the birds (adults and young, when present) at the nest site to ensure that they are not disturbed by Project construction work. Nest monitoring shall continue during construction until the young have fully fledged (have completely left the nest site and are no longer being fed by the parents) as determined by the qualified Caltrans-approved biologist in consultation with CDFW and/or USFWS. If it is necessary to prevent birds from nesting at a specific location within the construction area, a nesting bird exclusion plan will be prepared by the Contractor. It will specify what Caltrans-approved exclusion measures can be used under what conditions. The exclusion plan will be approved by Caltrans and/or CDFW and/or USFWS prior to implementation. • No more than 48 hours prior to tree removal, a qualified Caltrans-approved biologist will conduct a pre-construction survey of trees slated for removal for crevices and cavities that can provide bat roosting habitat or support active bat roosts. If active roosts are identified, the Project will implement exclusion devices determined in consultation with CDFW. • Within 48 hours prior to any work around the 60-inch culvert outfall into San Francisco Bay, including the installation of the cofferdam and removal of RSP, a qualified Caltrans-approved biologist will conduct pre-construction surveys for special-status species, otherwise protected species, and marine mammals that may occur in the area, such as western snowy plover, California least tern, brant, and pinnipeds. • A qualified Caltrans-approved and agency-approved biological monitor would be present during all work within San Francisco Bay associated with modifying the outfall of the 60-inch culvert. The biological monitoring would be present for installation, operation, and removal of the cofferdam, as well as for the installation of the flap gate after the cofferdam has been removed. • If a protected species is discovered during pre-construction surveys or during construction within the BSA, the qualified Caltrans-approved biologist will notify the Resident Engineer, who has the authority to stop all construction work on the site until the appropriate corrective measures have been conducted, and it is determined that the animal will not be harmed. Caltrans will notify the USFWS, NOAA Fisheries, and/or CDFW as required in resource agency permits and approvals.

Table 7. Avoidance and Minimization Measures

AMM	Description
Protect Fish, Aquatic Species, and Birds	• Installation of the sheet pile cofferdam would use methods that result in minimal hydroacoustic impacts, such as vibratory or push methods. Impact methods, such as pile driving, would not be used. • Installation and removal of the cofferdam would only occur during low tides to minimize potential impacts on aquatic species. Removal of the cofferdam would likely occur during a single low tide. However, installation of the cofferdam is anticipated to take several days, creating the potential for fish to become stranded within the partially installed cofferdam during normal tidal cycles, which could attract birds. The qualified Caltrans-approved biologist would work with the contractor to install the cofferdam while minimizing the potential for fish stranding. If listed threatened or endangered species are identified, the qualified Caltrans approved biologist will consult with CDFW and/ or NOAA Fisheries to develop and implement an appropriate fish translocation plan. Immediately upon completing the installation of the cofferdam, the qualified Caltrans-approved biologist would translocate any non-listed stranded fish outside of the dewatered area. Translocation methods and areas suitable for the translocation of fish would be determined in coordination with the NOAA Fisheries and/or CDFW, as appropriate.
Evaluate and Replace Trees	• Tree removal or alterations will be avoided wherever possible. • Prior to any tree removals or alterations, a survey will be conducted to identify potential structural issues that could result in safety hazards and ensure remaining trees can withstand strong winds. • In order to minimize impacts to nesting bird habitat, for removal of trees within Caltrans ROW, all trees removed will be replaced by native trees at a 1:1 ratio. Trees will be replaced in-kind or with trees of other native species; they will be planted close to the original removal location if possible, or at a minimum, within the same city/ROW.

4.1 Habitats and Natural Communities of Special Concern

4.1.1 Designated Sensitive Natural Communities

The CDFW's Natural Community Conservation Planning (NCCP) program originated from FGC Section 2800. The purpose of the NCCP program was to combine CDFW's efforts with private and public partners to take a broad-based ecosystem approach to planning for the protection and perpetuation of California's biological diversity. The goal of the NCCP is to identify and provide regional protection of plants, wildlife, and their habitats. Part of this effort is the development of a standardized classification of vegetation community nomenclature utilized by the National Vegetation Classification System. Another tool initiated by the NCCP program is the Vegetation Classification and Mapping Program (VegCAMP) as a result of a state mandate requiring CDFW to develop and maintain a vegetation mapping standard for the state per FGC Section 1940. Sensitive natural communities that have been mapped to date as a result of the VegCAMP effort are included in the CNDDB database.

SURVEY RESULTS

There are no CDFW-designated sensitive natural communities within or adjacent to the BSA (Figure 10). However, the following CDFW-designated sensitive natural communities within a 5-mile radius of the BSA in the CNDDB include:

- Northern coastal salt marsh – this community occurs along the San Francisco Bay shoreline along Richmond and El Cerrito (#20) as well as along the shoreline of Emeryville and the northern side of the toll plaza associated with the San Francisco-Oakland Bay Bridge (#19).

- Valley needlegrass grassland – this community occurs on Brooks Island off the shoreline of Richmond (#18).

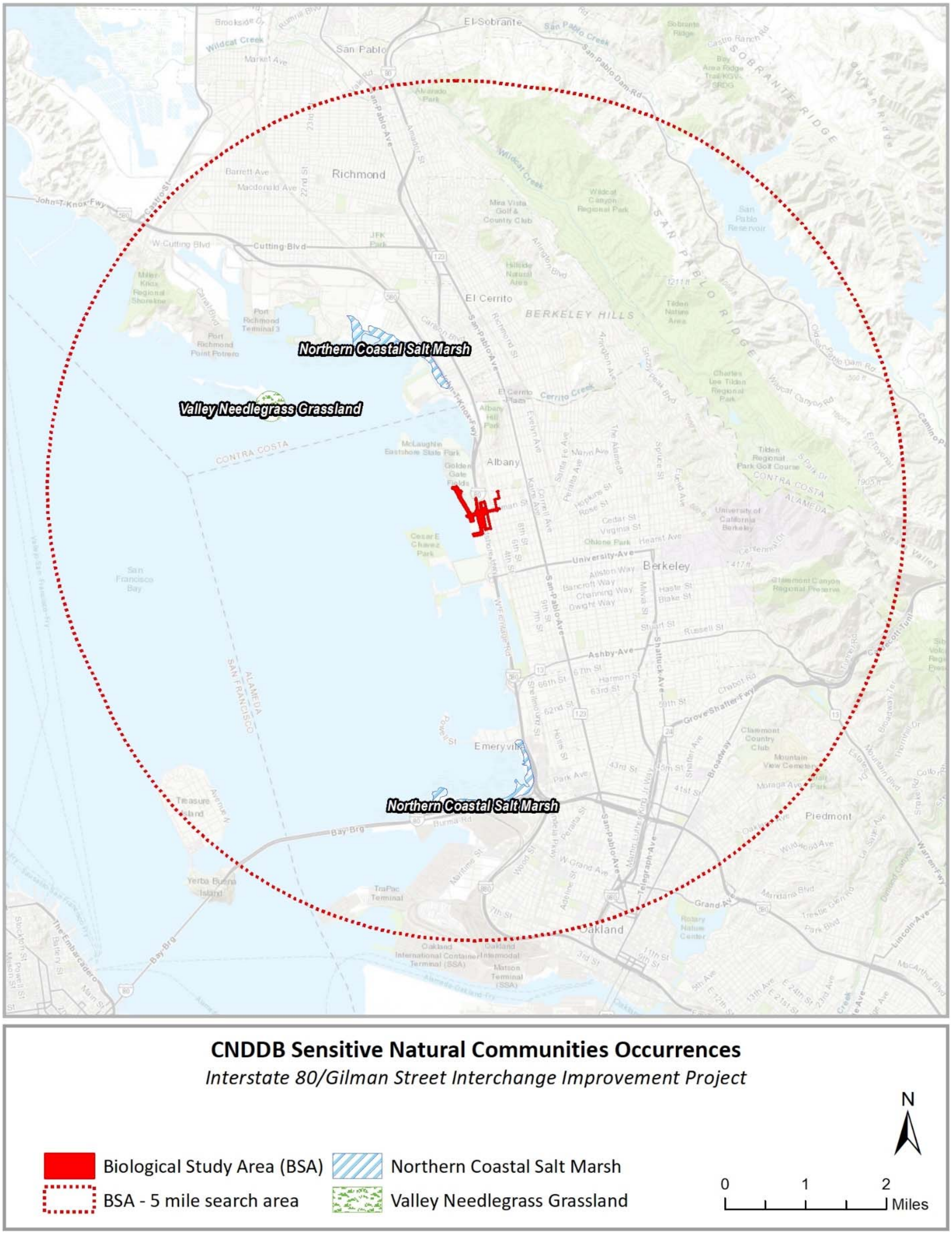

Figure 10. CNDDB Sensitive Natural Communities Occurrences

PROJECT IMPACTS

The Project will have no impact on CDFW-designated sensitive natural communities because there are none located within the BSA.

AVOIDANCE AND MINIMIZATION EFFORTS

Because no impacts to CDFW-designated sensitive natural communities are anticipated, there are no specific AMMs proposed.

COMPENSATORY MITIGATION

Because no impacts to CDFW-designated sensitive natural communities are anticipated, there is no proposed compensatory mitigation.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.1.2 Wetlands and "Other Waters of the U.S."

This section discusses potential Project impacts on "Waters of the U.S.," including wetlands. Wetlands and other water resources (e.g., rivers, streams, and natural basins) are a subset of "Waters of the U.S." and receive protection under Section 404 and 401 of the federal CWA. Additionally, the Rivers and Harbors Act (Sections 9 and 10) govern specified activities in "Waters of the U.S." including wetlands. The USACE has primary federal responsibility for administering regulations that concern "Waters of the U.S." and wetlands.

"Waters of the U.S." generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. Wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. 328.3(b), 51 F.R. 41250, November 13, 1986]. Wetlands can be perennial or seasonal, and isolated or adjacent to other waters." (Johnson Marigot Consulting 2018)

"The limit of USACE jurisdiction in tidal watercourses is defined as the high tide line (HTL). The HTL is defined as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the 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 the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm." (33 Code of Federal Regulations [CFR] 328.3)." (Johnson Marigot Consulting 2018)

"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 U.S.," must be authorized by the USACE pursuant to Section 10 of the RHA of 1899 (33 USC Section 403). Additionally, all work and structures proposed in unfilled portions of the interior of diked areas below former MHW must also be authorized under Section 10 of the same statute. MHW is defined as is the average of all the high-water heights observed over a period of several years." (Johnson Marigot Consulting 2018)

The California Water Code defines "Waters of the State" as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050[e]). The RWQCB may exercise jurisdiction over discharges into the "Waters of the State" identified in the BSA. In this report, "Waters of the U.S." are also "Waters of the State," with the exception of the BSA near Codornices Creek. See Section 4.1.3 for more information on "Waters of the State" that are not "Waters of the U.S.," or non-federal "Waters of the State."

SURVEY RESULTS

A wetland delineation was conducted in 2016 in areas that exhibited characteristic wetland vegetation and/or hydrologic indicators (Appendix D). The USACE did not take jurisdiction over any of the delineated features within the BSA. The USACE did take jurisdiction over a small depression located in the southeast corner of the Tom Bates Sports Complex near the Bay Trail, but this depression is not located within the BSA or the Project footprint.

A wetland delineation addendum was prepared in 2018 that encompassed areas that have been added to the BSA since the original wetland delineation was performed in 2016 (Appendix E). The wetland delineation addendum did not identify any wetlands within the BSA. The only jurisdictional feature delineated within the BSA was San Francisco Bay. Field marks observed indicative of the HTL included a line of algae along the shoreline protection, fine shell and debris along the beach, and deposition of floating debris near the algae colonization on RSP. The MHW was determined to be 5.79 feet (NAVD 88).

Table 8 summarizes the results of the wetland delineations performed for the Project. Refer to Appendix E for figures illustrating the results of the 2018 wetland delineation.

Table 8. Summary of Waters of the U.S. within the BSA

Jurisdictional Feature	Jurisdiction		
	CWA Section 404 (USACE)	CWA Section 401 (RWQCB)	RHA Section 10 (USACE)
San Francisco Bay	1.79 acre	1.79 acre	1.64 acre

PROJECT IMPACTS

Work within San Francisco Bay is required to replace the headwall of a 60-inch culvert that discharges into the Bay at the terminus of Gilman Street as well as replace RSP and install a flap gate on the outfall. Temporary impacts would be limited to the cofferdam that would be installed to isolate the work area around the existing culvert outfall from tidal action, allowing the contractor to work in a dry area, providing time for the concrete to cure properly, and reducing impacts on water quality. Although a new headwall and wingwalls would be constructed and RSP would be placed around the new headwall and wingwalls, these elements of the Project would be limited to replacing the existing headwall, wingwalls, and RSP. Table 9 summarizes the impacts on San Francisco Bay, including the source of impact, impact type, area of impact, and volume of cut and fill in areas regulated under the CWA and Rivers and Harbors Act.

Project features, specifically the features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices (Table 6), would reduce impacts on jurisdictional waters. These Project features would diminish the potential for adverse water quality effects by implementing administrative and engineering controls during the construction phase as well as slowing or stopping work in San Francisco Bay when it results in a potential to exceed water quality objectives.

Table 9. Impacts on Waters of the U.S. within the BSA

Jurisdictional Feature	Impact Source	Impact Type	CWA Sections 404 and 401	RHA Section 10
San Francisco Bay	Cofferdam	Temporary, fill/disturbance	0.030 acre 170 CY	0.024 acre 155 CY
	Sediment removal	Permanent, grading	0.21 acre 100 CY	0.21 acre 100 CY
	Remove/replace headwall	Permanent, cut	0.001 acre 5 CY	0.0 acre 0 CY
	Remove/replace RSP	Permanent, cut/fill	0.0087 acre 60 CY	0.0057 acre 40 CY

Implementation of the Project would result in a long-term benefit to the water quality of San Francisco Bay. The Project includes the construction of stormwater treatment BMPs that would target the removal of PCBs and mercury from stormwater runoff as well as the installation of trash capture devices wherever feasible. These elements of the Project would result in a permanent benefit to water quality and the aquatic habitat of San Francisco Bay.

AVOIDANCE AND MINIMIZATION EFFORTS

No AMMs specific to "Waters of the U.S." are proposed, because the Project features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices (Table 6) and the AMM titled Protect Fish, Aquatic Species, and Birds (Table 7) would reduce potential impacts on the aquatic habitats of San Francisco Bay.

COMPENSATORY MITIGATION

With Project features and the implementation of AMMs, temporary impacts on jurisdictional waters would be avoided or minimized. Additionally, because permanent impacts are limited to the replacement of existing infrastructure, the Project would not result in a permanent loss or degradation of jurisdictional waters and therefore, no compensatory mitigation is proposed. If required, compensatory mitigation for impacts on jurisdictional waters would be determined in coordination with the USACE and RWQCB during the CWA Section 404 and 401 permitting processes.

CUMMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.1.3 Non-federal Waters of the State

The California Water Code defines "Waters of the State" as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050[e]). "Waters of the State" include all "Waters of the U.S." as well as isolated wetlands, disjunct streams, and stream areas above the ordinary high-water mark either to the top of bank or farthest extent of riparian vegetation. The RWQCB and CDFW may exercise jurisdiction over impacts to "Waters of the State" and the RWQCB may also regulate discharges into the "Waters of the State."

SURVEY RESULTS

Non-federal "Waters of the State" are present within the BSA, consisting of the riparian vegetation along Codornices Creek.

PROJECT IMPACTS

No work is proposed within Codornices Creek or its riparian corridor. The nearest construction activity to Codornices Creek would be pavement rehabilitation along 5th Street. As such, there would be no direct impacts on non-federal "Waters of the State." However, Project features, specifically the Protect Water Quality and Implement Project Site Best Management Practices in Table 6, would reduce indirect impacts on non-federal "Waters of the State" resulting from sheet flow runoff into Codornices Creek from 5th Street. These Project features would diminish the potential for adverse water quality effects by implementing administrative and engineering controls during the construction phase. Specifically, these Project features ensure that sediment, materials, debris, refuse, and liquid wastes would not be discharged into Codornices Creek.

AVOIDANCE AND MINIMIZATION EFFORTS

No AMMs specific to non-federal "Waters of the State" are proposed, because the Project features titled Protect Water Quality and Implement Project Site Best Management Practices (Table 6) would reduce potential impacts on non-federal "Waters of the State."

COMPENSATORY MITIGATION

No impacts on non-federal "Waters of the State" would occur and therefore, compensatory mitigation is not proposed.

CUMMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.1.4 San Francisco Bay Conservation and Development Commission Jurisdiction

The BCDC regulates and establishes policies for Bay fill, use of the Bay and shoreline area, and public access to and along the Bay. BCDC jurisdiction includes the open water, marshes, and mudflats of the greater San Francisco Bay; portions of most creeks, rivers, sloughs, and other tributaries subject to tidal action that flow into San Francisco Bay; and salt ponds, managed wetlands, and a shoreline band that extends inland for 100 feet from the San Francisco Bay shoreline. For a project within any portion of BCDC jurisdiction, a permit from BCDC may be required. The *San Francisco Bay Plan* (SF Bay Plan) was completed and adopted by the BCDC in 1968, and it includes policies for managing use of the Bay and shoreline. The SF Bay Plan also identifies priority use areas on and around the Bay.

SURVEY RESULTS

The BCDC jurisdictional line used for the Project includes the Bay and Shoreline Band jurisdiction, as shown in Figure 11. As shown in Figure 12, the majority of the Tom Bates

Regional Sports Complex is included in the map because it is designated as a “waterfront park/beach” priority use area under the Bay Plan. Priority use areas can extend past the BCDC 100-foot shoreline band and restrict the type of projects that can occur in those areas.

Figure 11. BCDC Bay and Shoreline Band Jurisdiction in Project Area

Figure 12. Waterfront Park and Beach Priority Use Area (SF Bay Plan)

Project Impacts

There would be temporary impacts associated with installation, operation, and removal of a sheet pile cofferdam within BCDC's Bay jurisdiction, and there would be permanent impacts associated with removing and replacing a headwall and wingwalls, and adjacent RSP, at an existing 60-inch culvert outfall into San Francisco Bay. Project features, specifically the features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices in Table 6, would reduce impacts on water quality and aquatic habitats during work in San Francisco Bay. These Project features would diminish the potential for adverse water quality effects by implementing administrative and engineering controls during the construction phase as well as slowing or stopping work when work in San Francisco Bay results in a potential to exceed water quality objectives.

There would be temporary impacts on public access to the shoreline of San Francisco Bay. Construction activities may temporarily limit vehicular and pedestrian access to the waterfront at the terminus of Gilman Street and along Gilman Street Extension. There would also be a permanent loss in the number of informal vehicular parking spaces near the San Francisco Bay shoreline.

The Project would permanently increase multi-modal access to the shoreline of San Francisco Bay by extending the Bay Trail from its current terminus at the intersection of West Frontage Road and Gilman Street to the west toward San Francisco Bay, then to the north along Gilman Street Extension to the City of Albany, just beyond Berkeley's city limits. Additionally, a pedestrian overcrossing would be constructed over I-80 to connect a shared-use path along Eastshore Highway with the Bay Trail along West Frontage Road.

Avoidance and Minimization Efforts

No AMMs specific to activities within BCDC jurisdictional areas are proposed, because the Project features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices (Table 6) and the AMM titled Protect Fish, Aquatic Species, and Birds (Table 7) would reduce potential impacts on San Francisco Bay.

Compensatory Mitigation

If required, compensatory mitigation for impacts on BCDC jurisdiction would be determined during the permitting process with BCDC. Any required compensatory mitigation would likely be included as a condition within the BCDC permit.

Cummulative Impacts

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.1.5 Critical Habitat

Critical habitat is designated by the USFWS and NOAA Fisheries to protect areas that are essential to the survival of federally listed species of plants and wildlife. Projects that involve a federal permit, license, or funding and are likely to destroy or adversely modify critical habitat of are required to consult with the USFWS and NOAA Fisheries.

SURVEY RESULTS

Critical habitat for green sturgeon, steelhead, and chinook is present within the BSA (Figure 13).

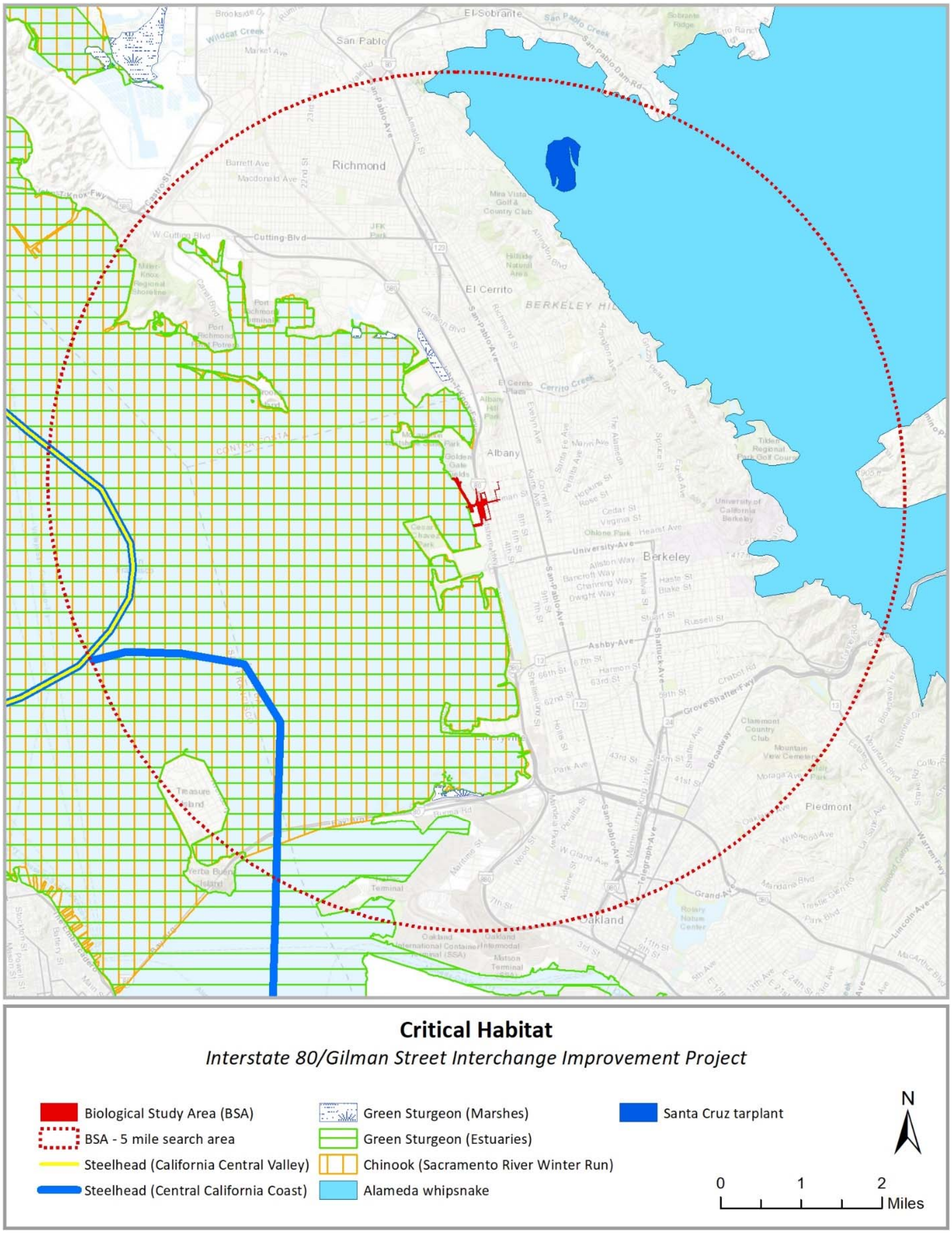

Figure 13. Critical Habitat

PROJECT IMPACTS

Impacts on critical habitat for steelhead, chinook, and green sturgeon would be the same because the critical habitat for these species within the BSA is limited to San Francisco Bay, a "Water of the U.S." Therefore, impacts on critical habitat would be the same as impacts on "Waters of the U.S.," as described in Section 4.1.2. However, to reiterate, impacts on "Waters of the U.S.," which includes the critical habitat for these species and their special-status populations, would be minimal. Temporary impacts would consist of the installation and operation of a sheet pile cofferdam, which would result in a temporary loss in habitat. Permanent impacts would be limited to the removal and replacement of the existing headwall and wingwalls and the adjacent RSP.

Project features, specifically the features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices in Table 6, would reduce impacts on jurisdictional wetland and waters. These Project features would diminish the potential for adverse water quality effects by implementing administrative and engineering controls during the construction phase as well as slowing or stopping work in San Francisco Bay if there is a potential to exceed water quality objectives.

AVOIDANCE AND MINIMIZATION EFFORTS

No AMMs specific to critical habitats are proposed, because the Project features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices (Table 6) and the AMM titled Protect Fish, Aquatic Species, and Birds (Table 7) would reduce potential impacts on critical habitat.

COMPENSATORY MITIGATION

With Project features and the implementation of AMMs, temporary impacts on critical habitat would be avoided or minimized. Additionally, because permanent impacts are limited to the replacement of existing infrastructure, the Project would not result in a permanent loss or degradation of critical habitat. Although compensatory mitigation for impacts on critical habitat is not anticipated or proposed, Caltrans will be pursuing technical assistance with NOAA Fisheries.

CUMMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.1.6 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act was passed in 1976 for the conservation and management of the fishery resources of the U.S. to prevent overfishing, to rebuild overfished stocks, to ensure conservation, and to facilitate long-term protection of Essential Fish Habitat. Essential Fish Habitat is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Magnuson-Stevens Fishery Conservation and Management Act is implemented by regional Fishery Management Councils that work with NOAA Fisheries to develop and implement fishery management plans. The plans must identify the Essential Fish Habitat for each fishery within their jurisdiction. When a project is proposed that could adversely affect Essential Fish Habitat, federal agencies must consult with NOAA Fisheries in order to obtain avoidance and minimization consultation as well as conservation and enhancement recommendations.

SURVEY RESULTS

The entire San Francisco Bay is classified as Essential Fish Habitat for species managed under the Pacific Coast Salmon Fishery Management Plan (FMP; Coho and Chinook salmon) and also for species managed under the Coastal Pelagic Species FMP and Pacific Coast Groundfish FMP (Figure 14). Pelagic species that are not federally-listed but managed under the MSA, which may occur within Essential Fish Habitat in the Project site include Pacific sardine (*Sardinops sagax*), Northern anchovy (*Engraulis mordax*), Pacific herring (*Clupea pallasii pallasii*), and jacksmelt (*Atherinopsis californiensis*). Species managed under the Pacific Coast Groundfish FMP but are not federally listed that may be within Essential Fish Habitat in the BSA include English sole (*Parophrys vetulus*). Furthermore, estuaries and seagrass communities within the San Francisco Bay are further defined as a Habitat Area of Particular Concern under the Pacific Coast Groundfish FMP.

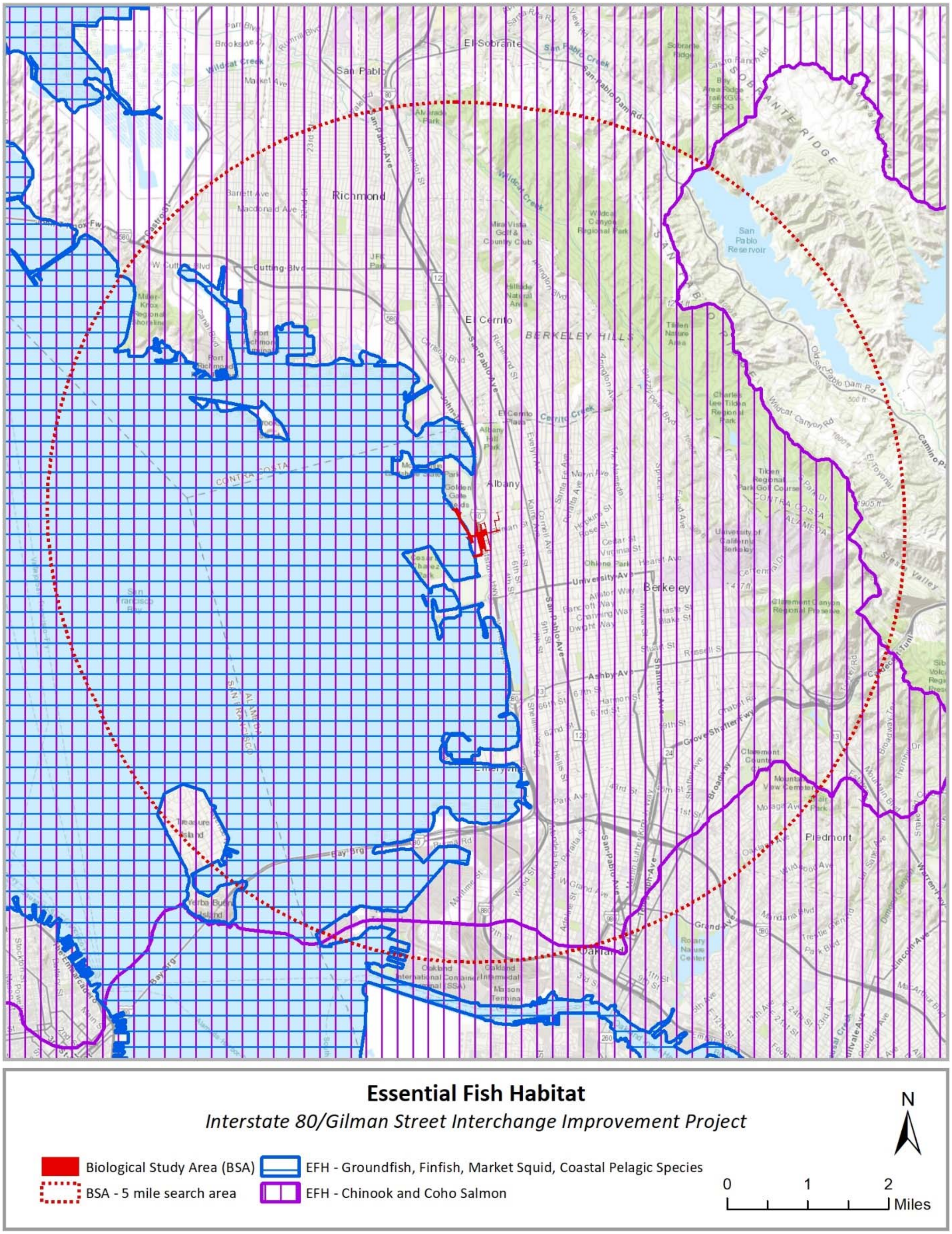

Figure 14. Essential Fish Habitat

PROJECT IMPACTS

Impacts on Essential Fish Habitat would be the same as impacts on “Waters of the U.S.,” as described in Section 4.1.2. Project features, specifically the project features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices in Table 6, would reduce impacts on Essential Fish Habitat. These Project features would diminish the potential for adverse water quality effects by implementing administrative and engineering controls during the construction phase as well as slowing or stopping work in San Francisco Bay when it results in a potential to exceed water quality objectives.

Additionally, the installation of the flap gate on the outfall of the 60-inch culvert would not impede fish passage, because there are no existing surface waterbodies within the Gilman Street watershed that provide suitable habitat for salmonids or sturgeon.

AVOIDANCE AND MINIMIZATION EFFORTS

No AMMs specific to Essential Fish Habitat are proposed, because the Project features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices (Table 6) and the AMM titled Protect Fish, Aquatic Species, and Birds (Table 7) would reduce potential impacts on aquatic habitats.

COMPENSATORY MITIGATION

With Project features and the implementation of AMMs, temporary impacts on Essential Fish Habitat would be avoided or minimized. Additionally, because permanent impacts are limited to the replacement of existing infrastructure, the Project would not result in a permanent loss or degradation of Essential Fish Habitat. Although compensatory mitigation for impacts on Essential Fish Habitat is not anticipated or proposed, Caltrans will be pursuing technical assistance with NOAA Fisheries.

CUMMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.2 Special-Status Plant Species

Based on literature and database searches and botanical surveys, 84 plant species were initially evaluated (Table 4), but none were determined to be present within the BSA. Nevertheless, this section includes a discussion of the botanical survey results, Project impacts, AMMs proposed to protect each species, proposed compensatory mitigation, and cumulative impacts assessments for special-status plants.

4.2.1 Special-Status Plant Species

SURVEY RESULTS

Protocol-level botanical surveys were conducted on March 17, 2016 and June 8, 2016 as well as April 25, 2018. The surveys were conducted in accordance with the botanical survey guidelines of the USFWS (1996), CDFW (2009a), and the CNPS (2001). Protocol-level surveys were floristic, meaning that all plant species encountered were identified to the taxonomic level needed to determine if they had a special-status. Surveys were conducted during the blooming season for all plants shown in Table 4, except for Bolander's water-hemlock, water star-grass, Carquinez goldenbush, Santa Cruz microseris, and California seablite.

The BSA is within a developed urban area that is highly disturbed. A majority of the BSA is paved, consisting of roadways and parking lots. Limited unpaved areas, consisting of areas along the San Francisco Bay shoreline and the riparian corridor along Codornices Creek are heavily used by people for recreational purposes, and the proposed staging area is routinely mowed. Additionally, the fields in the Tom Bates Sports Complex are a mix of lawns and artificial turf. A small vegetated strip also occurs between the Bay Trail and Tom Bates Sports Complex, and it is also routinely mowed for maintenance. No special-status plants were observed during surveys, and none are expected to occur within the BSA. The few areas where vegetation grows, which include the proposed staging area and the vegetated strip, are unlikely to sustain a seed bank for sensitive plant species because most of the soil is fill material.

PROJECT IMPACTS

There would be no impacts on special-status plants because none occur within the BSA.

AVOIDANCE AND MINIMIZATION EFFORTS

No special-status plants are present in the BSA, so specific AMMs are not proposed.

COMPENSATORY MITIGATION

There would be no impacts on special-status plants and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.2.2 Trees

SURVEY RESULTS

Tree surveys were performed on May 18, 2016 and April 25, 2018. The surveys identified 101 trees within the BSA. Tree species within the BSA are predominantly exotic species used for landscaping, including acacia, birch, maple, plum, London planetree, pittosporum, ash, evergreen pear, myoporum, eucalyptus, apple, and olive.

PROJECT IMPACTS

Implementation of the Project would require the removal of 15 existing trees. Within Caltrans' ROW, two eucalyptus and one landscape tree would be removed along the westbound on-ramp to I-80, and four cypress trees (*Cupressaceae* sp.) and two acacia trees would be removed from the I-80 off-ramps. Within the City of Berkeley, six evergreen pear trees would be removed from Eastshore Highway between Page Street and Gilman Street. No trees would be removed within the City of Albany. No other tree removals are anticipated to be required.

AVOIDANCE AND MINIMIZATION EFFORTS

The AMM titled Evaluate and Replace Trees (Table 7) would reduce the impact of tree removal on the natural environment by minimizing the alteration or removal of trees to where it is necessary and providing a at least one replacement tree for every tree that is removed. Some of the replacement trees would be situated in proposed tree wells along public roadways, which would be installed as a part of the Project's approach for stormwater management. Stormwater runoff would be directed into the tree wells, which would be planted with trees and other vegetation that would help to filter pollutants from runoff before it is discharged into San Francisco Bay.

COMPENSATORY MITIGATION

No compensatory mitigation for tree impacts is proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.2.3 Invasive Plants

Executive Order 13112 was designed to prevent the introduction of invasive species and provide for their control to minimize economic, ecological, and human health impacts. Noxious weeds are defined and prioritized by the California Department of Food and Agriculture or the California Invasive Plant Council (Cal-IPC).

SURVEY RESULTS

Nineteen non-native invasive plant species were identified within the BSA that have moderate- or high-risk impacts on native plant populations (Cal-IPC 2017). Fourteen are listed as having moderate (substantial and apparent) impacts, and five are ranked as having high (severe) impacts. Those listed as high-risk include foxtail chess (*Bromus madritensis*), hottentot fig

(*Carpobrotus edulis*), pampas grass (*Cortaderia jubata*), English ivy (*Hedera helix*), and Himalayan blackberry (*Rubus armeniacus*).

PROJECT IMPACTS

Clearing, grubbing, and earthwork in areas with invasive plant species has the potential to spread seeds and propagules of invasive species. During these activities, plant material and soil that contains plant material are transported to a stockpile or waste disposal site. The physical process of transporting the plant material could introduce invasive plant seeds into areas where they were not previously present through spills. If earthwork occurs during windy conditions and generates dust, there is a potential for earthwork to cause certain invasive plant seeds that can be transported aerially, such as pampas grass, to spread. Also, other species, like hottentot fig, are more easily spread by introducing cuttings or remnants of a plant into an area, rather than spreading by seeds.

To reduce the spread of invasive, non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species, Project features comply with Executive Order 13112. Project features would require the Contractor to contain invasive plant material, if disturbed, and dispose of it in a manner that will not promote the spread of the species. After construction, disturbed areas that previously contained noxious weeds will be seeded with a local native seed mix. If seeding is not possible, the area will be covered to the extent practicable with heavy, black plastic solarization material until the end of the Project.

AVOIDANCE AND MINIMIZATION EFFORTS

No AMMs for invasive plants are proposed because implementation of standard Caltrans BMPs would reduce the potential for encouraging the spread of invasive vegetation.

COMPENSATORY MITIGATION

With project features, impacts pertaining to the spread of invasive plant species are not anticipated and therefore, no compensatory mitigation is proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3 Special-Status Animal Species Occurrences

Based on species lists generated by the USFWS, NOAA Fisheries, and CNDDB, a total of 66 wildlife species were initially considered in this NES (Table 5). However, existing literature, database searches, and wildlife surveys indicate that of these 66 species, only 18 have potential to occur in the BSA. Species with no suitable habitat and no potential to occur in the BSA were dropped from consideration and are not discussed further in this NES. Table 10 lists the 18 special-status species that were determined to have the potential to occur within the BSA.

Table 10. Summary of Special-Status Animal Species with Potential to Occur in the BSA

Species	Status	Potential to Occur	Effects Finding for Federally-listed Species
Green sturgeon – southern DPS	FT	Low	May affect, but not likely to adversely affect.
Steelhead – central California coast DPS	FT	Low	May affect, but not likely to adversely affect.
Steelhead –Central Valley DPS	FT	Low	May affect, but not likely to adversely affect.
Chinook salmon – Central Valley spring run ESU	FT, ST	Low	May affect, but not likely to adversely affect.
Chinook salmon – Sacramento River winter run ESU	FE, SE	Low	May affect, but not likely to adversely affect.
Western pond turtle	SSC	Low	N/A
Brant	SSC	Moderate	N/A
Northern harrier	SSC	Moderate	N/A
White-tailed kite	FP	Moderate	N/A
American peregrine falcon	FP	Moderate	N/A
Short-eared owl	SSC	Low	N/A
Western snowy plover	FT, SSC	Low	No effect. No potential for take.
California least tern	FE, SE, FP	Low	No effect. No potential for take.
Saltmarsh common yellowthroat	SSC	Low	N/A
Alameda song sparrow	SSC	Low	N/A
Pallid bat	SSC	Low	N/A
Townsend’s big-eared bat	SSC	Low	N/A
Western red bat	SSC	Low	N/A

The following sections discuss each wildlife species listed in Table 10 including survey results, impacts on each species resulting from implementation of the Project, AMMs proposed to protect each species during construction, and proposed compensatory mitigation. Cumulative impacts are discussed in Section 4.4.

4.3.1 Green Sturgeon – Southern DPS

NOAA Fisheries has divided the range of the green sturgeon within California into two populations known as distinct population segments (DPS - defined as a vertebrate population or group of populations that is discrete from other populations of the species and significant in relation to the entire species). The southern DPS consists of coastal and Central Valley populations south of the Eel River (Humboldt County), and the only known spawning populations in the Sacramento River. The southern DPS green sturgeon is listed as a federally threatened species and a California SSC. San Francisco Bay lies within critical habitat for the green sturgeon (NOAA 2009). Declines in green sturgeon populations is attributed to over harvesting, habitat loss or degradation, and entrainment (Adams et al. 2002).

Very little is known about the historical abundance, diversity, and population status of the green sturgeon. They spend more time in the ocean than any other sturgeon species and migrate into rivers to spawn from March to July. The green sturgeon is a slow growing, long-lived species. Females begin spawning at 17 years of age and they are thought to spawn every three to five years depositing 60,000 to 140,000 eggs. Spawning occurs on rocky bottom substrates and juveniles spend one to four years in freshwater (Adams et al 2002). Green sturgeons concentrate in coastal estuaries during the late summer and early fall. Their primary food source consists of shrimp, mollusks, amphipods, and small fish. Sedimentation is a threat to this species. For this reason, it is recommended that Best Management Practices (BMPs) be implemented to eliminate or reduce sedimentation during work within or near San Francisco Bay.

SURVEY RESULTS

No focused fish surveys were conducted. However, San Francisco Bay and its tributaries contain the southern-most reproductive green sturgeon population (Adams et al 2002). Juveniles have been found throughout San Francisco Bay during trammel net sampling conducted by CDFW. This species may be present within San Francisco Bay year-round in low densities.

PROJECT IMPACTS

Potential impacts on green sturgeon would be limited to construction activities within San Francisco Bay. Work within San Francisco Bay is required to replace the headwall of a 60-inch culvert that discharges into the Bay at the terminus of Gilman Street as well as replace RSP and install a flap gate on the outfall. A cofferdam would be erected around the work area in San Francisco Bay. The cofferdam would likely be a sheet pile wall embedded in the intertidal zone immediately downstream from the outfall. Some sediment would be removed from inside the cofferdam area. Installation of the cofferdam would take several days, but the sheet piles would only be installed using methods that generate minimal noise, such as vibratory or push methods, during low tides. High tides that occur while the cofferdam is being installed creates the potential for fish to become stranded within the partially installed cofferdam.

Once the cofferdam is installed, dirt and RSP would be excavated from behind the headwall before the headwall would be demolished with a jackhammer. Once the existing headwall is removed, a form for the new headwall and wingwalls would be constructed, then concrete would be poured into the form. After the headwall and wingwalls have cured enough to hold the slope, a total of approximately 100 to 200 cubic yards of RSP would be placed in upland areas and USACE jurisdictional areas. The forms and sheet pile cofferdam would be removed after 7 days, allowing the headwalls and wingwalls to cure and the placement of RSP in dry conditions.

The flap gate would be installed at low tide after the concrete has reached 28-day strength. The preferred method for installing the flap gate would be to include all anchor bolts in the form before concrete is poured. Alternatively, holes may be drilled into the headwall after which threaded studs would be screwed into the holes and securely locked in position with epoxy or other means. The flap gate would be hoisted by a crane, then mounted and secured with hex lug nuts.

Project features, specifically the features titled Protect Water Quality, Monitor Water Quality, and Implement Project Site Best Management Practices in Table 6, would reduce impacts on sturgeon habitat. These Project features would diminish the potential for adverse water quality effects by implementing administrative and engineering controls during the construction phase as well as slowing or stopping construction activities in San Francisco Bay when they result in a potential to exceed water quality objectives.

Nevertheless, the installation and removal of the cofferdam would disturb the sediment within the intertidal zone, resulting in the potential for an increase in suspended sediment concentrations during the following high tide. Any changes in water quality due to suspended sediment concentrations would be temporary, minimal, and localized to the immediate vicinity of the work site. While the work site near the culvert outfall is isolated from San Francisco Bay with a cofferdam, there would be no potential for the take of individual sturgeon. However, construction activities in this area would generate noise that may cause sturgeon in the area to move away from the work area.

As described in Section 4.1.2, implementation of the Project would result in a long-term benefit to the water quality of San Francisco Bay. The Project includes the construction of stormwater treatment BMPs that would target the removal of PCBs and mercury from stormwater runoff, as well as the installation of trash capture devices wherever feasible. These elements of the Project would result in a permanent benefit to water quality and the aquatic habitat of San Francisco Bay.

AVOIDANCE AND MINIMIZATION EFFORTS

As described in the previous section, Project features (Table 6) avoid or minimize impacts on green sturgeon habitat, while AMMs (Table 7) would be used to avoid the take of individual green sturgeon. The AMM titled Conduct Pre-construction Surveys and Biological Monitoring would be implemented to ensure that green sturgeon are not present in the work area during installation and removal of the cofferdam. The AMM titled Protect Fish, Aquatic Species, and Birds would be implemented to ensure that the cofferdam is installed/removed during low tide in the least impactful manner. In the unlikely event that fish become stranded inside the cofferdam during the installation process, the AMM titled Protect Fish, Aquatic Species, and Birds would be implemented to relocate fish that become stranded inside the cofferdam. By performing work within San Francisco Bay when sturgeon are not present and relocating any fish that become stranded inside the cofferdam, the take of individual green sturgeon would be avoided.

COMPENSATORY MITIGATION

The take of green sturgeon is not anticipated. However, there is a small potential for the entrapment of green sturgeon within the cofferdam while the cofferdam is being installed (1 to 2 days), which could require the relocation of individual sturgeon. Although compensatory mitigation for impacts on green sturgeon is not anticipated or proposed, Caltrans will be pursuing technical assistance with NOAA Fisheries.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.2 Steelhead – Central California Coast DPS

Steelhead are anadromous salmonids, which means that the adults return to their natal streams to spawn after one to three years at sea. Adults are silver with pinkish cheeks, darkening during their time in fresh water, and have black spots on their tail, fins, and back. They can reach more than 25 inches and up to 12 pounds. Juveniles spend from one to three or more years rearing in their natal stream before migrating to sea as smolts. Successful spawning and juvenile rearing require certain types of habitat, including coarse, clean, well-oxygenated gravel for spawning and incubation. Excessive accumulations of fine sediment directly affect the viability of eggs, embryos, and juveniles (Barnhart 1986). After emerging from the gravel, juveniles require cool, clean water that persists through the dry season, a supply of invertebrate food, and shelter for resting and protection from predators. Spawning and juvenile rearing usually takes place in the upper reaches of smaller tributaries where suitable spawning gravel is present and cooler water persists throughout the summer months.

Threats to steelhead include drought, high water temperatures (both freshwater and marine), loss and degradation of spawning habitat by agriculture and urbanization, use of antiquated fish screens and ladders, and levee construction and maintenance projects. Predation by non-native fish and marine mammals can also contribute to population declines.

The Central California Coast steelhead includes all naturally spawned populations from the Russian River in Sonoma County south to Aptos Creek in Santa Cruz County as well as the drainages of the San Francisco and San Pablo bays and their tributaries eastward to Chipps Island at the confluence of the Sacramento and San Joaquin rivers.

SURVEY RESULTS

No focused fish surveys were conducted. However, based on literature review and database searches, there is low potential for steelhead to occur within the portion of the BSA located in San Francisco Bay. During a study in 2002 and 2003, a total of 55 juvenile rainbow trout/steelhead were trapped in Codornices Creek; most of these fish were young-of-the-year but the oldest was estimated to be approximately 3 years (Kier Associates 2003). In 2006, the total population of rainbow trout/steelhead in Codornices Creek was estimated to be 504 individuals (Reguso 2012). While rainbow trout/steelhead have been reported to be present within Codornices Creek, it is not known whether these fish are anadromous steelhead or resident rainbow trout. Lacking confirmation from a fisheries biologist with knowledge of the runs in Codornices Creek, it is assumed that these studies are referring to resident rainbow trout and not the federally threatened, anadromous Central California coast DPS of steelhead. This is supported by a complete lack of steelhead occurrences in CDFW’s Bay Study trawl data collected near the BSA between 1980 and 2012. Regardless of whether these fish are rainbow trout or steelhead, no work is proposed within Codornices Creek.

PROJECT IMPACTS

Impacts on steelhead would the same as green sturgeon, as described in Section 4.3.1.

AVOIDANCE AND MINIMIZATION EFFORTS

Project features in Table 6 and AMMs in Table 7 would be used to reduce impacts on the central California coast DPS of steelhead and its habitat, as described in Section 4.3.1.

COMPENSATORY MITIGATION

The take of steelhead is not anticipated. However, there is a small potential for the entrapment of steelhead within the cofferdam while the cofferdam is being installed (1 to 2 days), which could require the relocation of individual steelhead. Although compensatory mitigation for impacts on steelhead is not anticipated or proposed, Caltrans will be pursuing technical assistance with NOAA Fisheries.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.3 Steelhead – Central Valley DPS

The basic life history of this DPS is the same as Central California Coast DPS (Section 4.3.2), with the following differences. The California Central Valley steelhead is a federally threatened DPS with no State status. The Central Valley steelhead DPS includes all naturally spawned populations in the Sacramento and San Joaquin rivers and their tributaries, but not San Francisco and San Pablo bays and their tributaries. Steelhead are included in the Recovery Plan for Sacramento River Winter-run Chinook Salmon, Central Valley Spring-run Chinook Salmon, and Central Valley Steelhead (NOAA Fisheries 2014b).

SURVEY RESULTS

No focused fish surveys were conducted. However, based on literature review and database searches, there is potential for this species to occur in low numbers within the portion of the BSA located in San Francisco Bay.

PROJECT IMPACTS

Impacts on steelhead would the same as green sturgeon, as described in Section 4.3.1.

AVOIDANCE AND MINIMIZATION EFFORTS

Project features in Table 6 and AMMs in Table 7 would be used to reduce impacts on the Central Valley steelhead DPS and its habitat, as described in Section 4.3.1.

COMPENSATORY MITIGATION

The take of steelhead is not anticipated. However, there is a small potential for the entrapment of steelhead within the cofferdam while the cofferdam is being installed (1 to 2 days), which could require the relocation of individual steelhead. Although compensatory mitigation for impacts on steelhead is not anticipated or proposed, Caltrans will be pursuing technical assistance with NOAA Fisheries.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.4 Chinook Salmon – Central Valley Spring Run ESU

There are two distinct types of Chinook salmon; one is found mostly in headwater streams of large river systems and the other is more commonly found in coastal streams in North America. As juveniles, the stream dwelling Chinook reside longer (up to two years) in freshwater and migrate long distances to the central North Pacific Ocean where they feed and mature, then return to their natal stream to spawn. The ocean dwelling Chinook tend to use estuaries and coastal areas for juvenile rearing.

Chinook are the largest salmon with adults weighing over 40 pounds. Chinook reach sexual maturity between 2 to 7 years. When they reach their natal streams, the female Chinook digs a nest (redd) by swishing her tail through course gravel in a portion of the stream that has suitable water depth and velocity. After depositing her eggs, the male deposits sperm into the redd. Both protect the redd but die within 25 days after spawning. The eggs hatch in about 90 to 150 days (NOAA Fisheries 2010).

Chinook ESUs are based upon the specific run (NOAA Fisheries 2010). Central Valley spring run chinook begin migrating to natal spawning streams in the Central Valley during high flow events beginning in January and February. Adults seeks deep pools of cool water in streams and rivers, where they spend the summer until spawning in the fall. Juveniles migrate to sea within 3 to 12 months after hatching.

SURVEY RESULTS

No focused fish surveys were conducted. However, based on literature review and database searches, there is potential for this species to occur in low numbers within the portion of the BSA located in San Francisco Bay.

PROJECT IMPACTS

Impacts on chinook salmon would the same as green sturgeon, as described in Section 4.3.1.

AVOIDANCE AND MINIMIZATION EFFORTS

Project features in Table 6 and AMMs in Table 7 would be used to reduce impacts on the Central Valley spring run of chinook salmon and its habitat, as described in Section 4.3.1.

COMPENSATORY MITIGATION

The take of chinook is not anticipated. However, there is a small potential for the entrapment of chinook within the cofferdam while the cofferdam is being installed (1 to 2 days), which could require the relocation of individual chinook. Although compensatory mitigation for impacts on chinook is not anticipated or proposed, Caltrans will be pursuing technical assistance with NOAA Fisheries.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.5 Chinook Salmon – Sacramento River Winter Run ESU

The basic life history of the Sacramento River winter run chinook is the same as the Central Valley spring run (Section 4.3.4), with the following differences. The Sacramento River winter run includes all chinook that naturally spawn in the Sacramento River and its tributaries. This ESU passes through the Golden Gate beginning in November and continue upstream between December and August. Spawning occurs from mid-April to August, peaking in June and July. Because this ESU spawns during late spring and summer, they require an adequate supply of cold water for successful reproduction. After hatching, juveniles migrate downstream from July through March, and reach the delta from September through June (CDFW 2018).

SURVEY RESULTS

No focused fish surveys were conducted. However, based on literature review and database searches, there is potential for this species to occur in low numbers within the portion of the BSA located in San Francisco Bay.

PROJECT IMPACTS

Impacts on chinook salmon would the same as green sturgeon, as described in Section 4.3.1.

AVOIDANCE AND MINIMIZATION EFFORTS

Project features in Table 6 and AMMs in Table 7 would be used to reduce impacts on the Sacramento River winter run chinook and its habitat, as described in Section 4.3.1.

COMPENSATORY MITIGATION

The take of chinook is not anticipated. However, there is a small potential for the entrapment of chinook within the cofferdam while the cofferdam is being installed (1 to 2 days), which could require the relocation of individual chinook. Although compensatory mitigation for impacts on chinook is not anticipated or proposed, Caltrans will be pursuing technical assistance with NOAA Fisheries.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.6 Western Pond Turtle

The western pond turtle, a California SSC, occurs throughout northern California. Pond turtles are associated with permanent or nearly permanent water including ponds, lakes, streams, and irrigation ditches or permanent pools along intermittent streams in a variety of environments. The drab brown or khaki-colored turtles are often observed basking on exposed sites, such as logs and mud banks. An omnivorous species, pond turtles feed on a variety of items including aquatic plant material, small insects, aquatic invertebrates, fish, and frogs. They lay their eggs upland of streams in nests they dig in dry soil with sparse vegetation and southern exposure. After the eggs are deposited in the nest, they cover the hole with a mixture of vegetation and wetted soil. Nesting occurs from April through August (Stebbins 2003). Habitat alteration (e.g., flood control projects, creek channelization, and riparian development) and predation of the young by bullfrogs, raccoons, introduced red foxes, and bass have been the primary causes for decline of the species.

SURVEY RESULTS

This species was not observed during biological resource surveys. However, based on literature review and databases searches, this species may use Codornices Creek as a dispersal corridor.

PROJECT IMPACTS

Although this species may be present within Codornices Creek, no work is proposed within Codornices Creek or its riparian corridor. The nearest construction activity to Codornices Creek would be pavement rehabilitation along 5th Street. As such, the take of individual turtles would not occur.

AVOIDANCE AND MINIMIZATION EFFORTS

No additional AMMs beyond those described in Table 7 are proposed for Western pond turtle.

COMPENSATORY MITIGATION

No impacts on Western pond turtle would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.7 Brant

The brant is a small dark goose with a white ring around its neck and ventral area. This species occurs throughout much of the northern hemisphere. They breed along the shoreline of arctic Russia, Alaska, Canada, and Greenland, and winter in the mid-Atlantic shoreline in the U.S., the Aleutian Islands, San Francisco and Humboldt bays, and Baja California. In the summer, brant breed in salt marshes in the arctic, but they typically spend the winter in areas with abundant intertidal plants, most often eelgrass. Other species of geese do not rely so heavily on a single plant species during the non-breeding winter season. Unlike other geese, brant are not associated with agricultural fields or lawns (Lewis et al. 2013). Wintering brant as well as staging brant (i.e., migrating birds that temporarily stay in one area to rest and refuel before continuing with migration) are designated as a California SSC.

SURVEY RESULTS

This species was not observed during biological resource surveys. However, database searches and literature review indicate the presence of eelgrass just beyond the western limits of the BSA along the shoreline near Golden Gate Fields (NOAA Fisheries 2014a) and the frequent presence of overwintering brant in these eelgrass beds and adjacent habitats. Within the BSA, wintering brant may roost or preen on the RSP along the shoreline or in the intertidal zone.

PROJECT IMPACTS

The take of individual brant would not occur. If brant are present within the BSA, it is anticipated the presence of humans, noise, and other disturbances associated with construction activities would cause them to move farther away from the shoreline or seek suitable habitat elsewhere. There is no potential for nest abandonment because this species does not breed within the BSA.

AVOIDANCE AND MINIMIZATION EFFORTS

No additional AMMs beyond those described in Table 7 are proposed for brant.

COMPENSATORY MITIGATION

No impacts on brant would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.8 Northern Harrier

The northern harrier is a California SSC. Northern harriers are an average-sized hawk found throughout California and can be year-round residents or migratory. This bird forages close to the surface over fresh and saltwater emergent wetlands and also open meadows, grasslands, and rangelands. It is seldom found in woodlands. Small rodents, birds, frogs, small reptiles, crustaceans, insects, and occasionally fish are part of their diet. Pairs move to breeding grounds in late February through early March and establish a ground nest in shrubby vegetation, usually at marsh edges where they build a nest consisting of a large mound of sticks on wet areas, or in small grassy depressions at drier sites (Polite 2005). Breeding activity begins in April with an average clutch size of 5 eggs that are incubated for about 30 days (California Partners in Flight 2000). The young fledge in 30 to 35 days and the juveniles may roost with adults in late autumn and winter. Northern harrier populations have been suffering from serious decline for the past 50 years due to loss of habitat; cultivation of agricultural crops such as hay, wheat and alfalfa; pesticide use; and trampling of nests by livestock.

SURVEY RESULTS

This species was not observed during biological resource surveys. However, there is potential for this species to nest in close proximity to the BSA and as a result forage within the BSA. This potential to occur is based on a nearby CNDDB record (#5) for a nest approximately 0.5 miles south of the BSA within McLaughlin Eastshore State Park in 2002. Additionally, there is a more recent record for a nesting pair in the same area from 2008 (Lewis 2008). Although harriers may nest near the BSA, there is no suitable nesting habitat within the BSA.

PROJECT IMPACTS

Construction of the Project would not result in the take of individual harriers or result in nest abandonment, because foraging in the BSA is anticipated to occur infrequently and nesting within the BSA is unlikely. Moreover, foraging within the BSA is most likely to occur along the shoreline of San Francisco Bay or near Tom Bates Regional Sports Complex rather than the urbanized areas of Berkeley and Albany. No work is proposed in the grassland areas and work along the shoreline of San Francisco Bay is limited to the area immediately surrounding the culvert outfall.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMM titled Conduct Pre-construction Surveys and Biological Monitoring (Table 7), there would be no impacts on Northern harrier.

COMPENSATORY MITIGATION

No impacts on Northern harrier would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.9 White-tailed Kite

The white-tailed kite is a Fully Protected species and is also protected under the federal MBTA. This white hawk with black patches on its wings can be observed hovering above open grasslands, agricultural fields, and wetlands foraging for rodents. In California, the white-tailed kite ranges from the coastline west to the Sierra Nevada and is patchily distributed from Eureka to the southern border. They are mostly year-round residents but move in response to prey abundance.

White-tailed kites take cover and build nests in trees and tall shrubs with dense canopies. Their nests are situated near open foraging areas and are constructed of loosely piled sticks and twigs in the fork near the top of a tree or bush. They breed between February to October, laying 3 to 5 eggs which are incubated for about one month. The young fledge in 5 to 6 weeks (Polite 2005).

The white-tailed kite was near extinction in the 1930's (Pickwell 1930) probably due to hunting and egg collection (Waian and Stendell 1970). Kite populations began to increase between 1940 and 1970 due to protection and possibly agricultural expansion which increased the rodent population, a preferred food item (Moore 2008).

SURVEY RESULTS

This species was not observed during biological resource surveys. However, there is potential for this species to nest in close proximity to the BSA and as a result forage within the BSA. This potential to occur is based on a nearby CNDDB record (#59) approximately 0.5 miles southwest of the BSA within the Berkeley Marina in 1994. More recently, this species was documented nesting in the northern portion of McLaughlin Eastshore State Park in 2017, as indicated by the presence of an adult with a juvenile (Strauss 2017). Although white-tailed kite may nest near the BSA, there is no suitable nesting habitat within the BSA.

PROJECT IMPACTS

Impacts on white-tailed kite would be the same as Northern harrier, as described in Section 4.3.8.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMM titled Conduct Pre-construction Surveys and Biological Monitoring (Table 7), there would be no impacts on white-tailed kite.

COMPENSATORY MITIGATION

No impacts on white-tailed kite would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.10 American Peregrine Falcon

The American peregrine falcon is a Fully Protected species and is also protected under the MBTA. This species is found throughout North America in different terrestrial biomes. Habitats with cliffs are utilized by breeding falcons and they usually nest near water. They also can use towers, bridges, and buildings as nesting habitat (Wheeler 2003, White et al. 2002). Foraging occurs in open habitats, with non-breeding falcons occupying these habitats as well. Impacts from DDT and other chemical poisons have significantly diminished the breeding range from its original range, which included the eastern and mid-west United States where a majority of the distribution is urban. Peregrine falcons are most widely found in Alaska, northern California, western Colorado, Arizona, and Utah (White et al. 2002). This species is considered a long-distance migrant. It can travel alone or in small groups, usually between 10 to 20 individuals, and migrate distances from 87 to 124 miles per day. During their migration, they usually stay as long as eight days at stopovers for hunting. Migration routes occur along leading lines and coastal areas with ideal habitat. This includes the eastern and gulf coasts of the U.S. and eastern Mexico. In smaller numbers, migrations occur along the shores of the Great Lakes, west coast of the U.S., western Mexico, and the eastern face of the Rocky Mountains (Goodrich and Smith 2008).

Peregrine falcons prey on a select group of species in local and regional areas with their selection varying seasonally. The majority of their prey includes birds, from small passerines to mid-sized waterfowl, and occasionally bats. Juvenile falcons feed on large flying insects (Wheeler 2003). Hunting occurs from morning to late evening and sometimes this species can be nocturnal. Peregrine falcons are aerial and perch hunters, rarely seen scavenging (Wheeler 2003). Nests are built in substrates on ledges of cliffs. Depressions are made in the substrate by males scrapping it with their talons. Most falcons will occupy ledges used by other peregrines in previous years to build their nests. They arrive at their nest sites during April and May and begin laying eggs two weeks to two months after arrival, depending on the latitude. A decrease in nest success has been attributed to human disturbances near occupied nests (Wheeler 2003).

SURVEY RESULTS

This species was not observed during biological resources surveys. A review of existing literature and database searches indicate that peregrine falcons are regularly observed along the eastern shore of San Francisco Bay, including the waterfront near Gilman Street (Maizlish 2013a). However, peregrine falcons prefer to nest on tall structures, such as the San Francisco-Oakland Bay Bridge, and rocky cliffs. The BSA lacks these preferred nesting features; therefore, nesting within the BSA is unlikely. However, there is potential for falcons to nest on suitable tall structures near the BSA.

PROJECT IMPACTS

Impacts on peregrine falcon would be the same as Northern harrier, as described in Section 4.3.8. A pre-construction survey would verify the presence or absence of nesting falcons, and a no-work buffer would be implemented around the nest if necessary.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMM titled Conduct Pre-construction Surveys and Biological Monitoring (Table 7), there would be no impacts on peregrine falcon.

COMPENSATORY MITIGATION

No impacts on American peregrine falcon would occur, therefore compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.11 Short-eared Owl

The short-eared owl is widely distributed across the globe, but they generally occur in low densities. In California, this owl is considered to be an SSC, and it is also protected under the MBTA. The short-eared owl resides in open habitats, such as marshes, grasslands, and tundra, where its primary food source are small mammals, such as voles. Like other birds that rely on a fluctuating food resource, this owl shows substantial variation in population and reproductive success among years, and it may even be nomadic at time while searching for suitable habitat with sufficient food resources. Unlike many other owl species, short-eared owls are active during both the day and night. Short-eared owl hunt while flying low over the ground with wings slightly raised above horizontal, or while hovering. Because these owls nest on the ground, they are vulnerable to disturbances while nesting. In recent decades, the population of short-eared owl has declined in many parts of the U.S., including the San Francisco Bay area. Habitat loss and increased levels of predation owing to the fact that they nest on the ground are suggested to be the primary cause of their recent decline (Wiggins et al. 2006).

SURVEY RESULTS

This species was not observed during biological resources surveys. There are no CNDDB records for short-eared owl within 5 miles of the BSA. According to the CNDDB, there are only two records of nesting short-eared owls within the entire San Francisco Bay area, the most recent of which is from 1987. Because the BSA is frequently used for recreation by humans and their pets and short-eared owls nest on the ground, there is no suitable nesting habitat within the BSA. However, a review of the eBird database indicate that this species is infrequently observed in McLaughlin Eastshore State Park and Point Isabel Regional Shoreline foraging during the non-breeding season (winter) (eBird 2012).

PROJECT IMPACTS

Impacts on short-eared owl would be the same as Northern harrier, as described in Section 4.3.8. A pre-construction survey would verify the presence or absence of nesting short-eared owls, and, if necessary, a no-work buffer would be implemented around the nest.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMM titled Conduct Pre-construction Surveys and Biological Monitoring (Table 7), there would be no impacts on short-eared owl.

COMPENSATORY MITIGATION

No impacts on short-eared owl would occur, therefore compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.12 Western Snowy Plover

The Western snowy plover is a federally threatened and California SSC, in addition to being protected under the federal MBTA. This bird is the subject of the USFWS 2007 *Recovery Plan for the Pacific Coast Population of the Western Snowy Plover*. This small white shorebird with a short black bill, black legs and markings occurs along the Pacific coastline from southern Washington to southern Baja California. They nest in slight depressions in sand or similar substrates on sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Snowy plovers are highly sensitive to disturbance from humans and their pets and have adapted to nesting in areas less accessible to human activity such as dredged material disposal sites and salt ponds and their adjacent levees.

Nesting habitats on beaches are also susceptible to high winds, storms, and wave action. Snowy plovers typically forage for invertebrates along the shoreline. As early as January males choose a nesting territory then establish a nest by scraping the sand to form a hollow depression in open flat areas. The female lays two to three eggs which are incubated by both sexes. Young snowy plovers hatch precocial (born well developed and active, often able to forage) and are capable of flying about 30 days after hatching. The female leaves the chicks about one week after hatching in order to establish a new nest. The male remains with the young until they can fly. The female can nest up to three times in a breeding season under optimal conditions (USFWS 2012b).

While incubating and nesting, snowy plovers have a limited foraging range. At Mono Lake in Inyo County, plovers were documented only as moving as far as 0.9 mile from an active nest to forage (Page et al. 1983). A small percentage of snowy plovers at the Great Salt Lake in Utah traveled more than 2.2 miles from their nest to forage, but most only traveled about 330 feet from their nest to forage (Paton 1994). These studies indicate a preference for nesting snowy plovers to forage near their nest, rather than travel long distances to forage while nesting.

SURVEY RESULTS

No snowy plovers were observed during biological resource surveys. While the CNDDB indicates there is little potential for snowy plovers to occur in the BSA, a search of the eBird database indicates there is potential for this species to occur within the BSA, particularly in the intertidal zone near the outfall of the 60-inch culvert at the end of Gilman Street. Nesting within the BSA is not likely because the intertidal zone is submerged during high tides and is disturbed by people and dogs during low tides; however, there is potential for this species to forage within the BSA during the nonbreeding season.

eBird contains 25 checklists of birds observed along the waterfront of San Francisco Bay at the end of Gilman Street. The oldest of these checklists is from 1996, with a majority of the checklists having been submitted between 2013 and 2018. Of these checklists, 22 are considered to be “complete” checklists, where the observer documented all bird species present. Because a complete checklist documents all species present, they can also be used to evaluate what species were absent. In all 22 complete eBird checklists submitted between 1996 and 2018 for the Gilman Street Waterfront location, which includes the BSA, no snowy plovers were observed.

However, eBird contains records of snowy plovers to the north and south of the BSA. A review of eBird data indicates that observations of snowy plovers in the BSA vicinity are infrequent and generally of few individual plovers[33]. Additionally, most of the snowy plovers observed in the BSA vicinity are from the fall and winter months after nesting has ended, supporting the assertion that the BSA vicinity does not provide suitable nesting habitat. There is a record of one snowy plover in the BSA vicinity from the breeding season (between March and June), but no details were provided, such as the number and age of plovers.

The southern portion of San Francisco Bay (South Bay), from just north of the San Mateo Bridge (SR 92) to the extreme southern portion of San Francisco Bay, contains the majority of snowy plover nesting habitat in the greater San Francisco Bay area. Most of this nesting habitat is located in wildlife refuges that occupy more than 30,000 acres of land and water, including former salt ponds. In the 2009 breading season survey, a total of 147 breeding snowy plovers were documented in South Bay wildlife refuges and in all of Napa, Alameda, Santa Clara, and San Mateo counties (Robinson-Nilsen et al. 2009). Compared to other species of shorebirds, the

[33] There is one eBird checklist (Checklist S33537472) that includes a purported observation of 10 snowy plovers at Berkeley Beach, across I-80 from the Berkeley Aquatic Park. However, it has been suggested that these birds may have been misidentified semipalmated plovers, a closely-related species that is similar in appearance to snowy plovers and more abundant in the San Francisco Bay area than snowy plovers.

size of the nesting snowy plover population in the San Francisco Bay Area is relatively small. Thus, the chances of encountering a snowy plover within the Bay are comparatively slim.

In the CNDDB, the nearest recording of breeding western snowy plovers to the BSA is on Bay Farm Island near Alameda. In 1974, a single adult and chick were observed. However, follow-up visits in 1977 and 1979 did not detect any chicks, indicating that Bay Farm Island was a marginal breeding site for this species. The CNDDB does not contain any other information regarding the use of Bay Farm Island by nesting snowy plovers after 1979. However, recent breeding records for western snowy plover in CNDDB are all from the South Bay. These breeding records are in large expanses of suitable habitat associated with the wildlife refuges described above.

Western snowy plover prefers to nest on sandy beaches above the limits of tidal influence. Within the BSA, the only potential nesting habitat for these plovers is within the intertidal zone of the San Francisco Bay. Therefore, there is no suitable nesting habitat within the BSA. Additionally, the BSA is over 20 miles from nesting sites in the South Bay. Due to this distance, plovers are unlikely to be found foraging in the BSA while nesting (spring and early summer). Thus, the BSA is only likely to provide foraging habitat for snowy plovers after nesting (late summer, fall, and winter). However, foraging habitat in the BSA is marginal, corroborated by the lack of snowy plover observations within the BSA in eBird and CNDDB.

PROJECT IMPACTS

Construction of the Project would not result in the take of individual plovers or result in nest abandonment, because there is no suitable nesting habitat within the BSA and plovers commonly forage near their nests. Additionally, foraging habitat within the BSA is marginal, because snowy plovers only have access to foraging habitat within the BSA during low tide and this area is heavily used for recreation by residents and their pets during low tide. Thus, if any foraging plovers are present within the BSA during the construction phase, they would likely be accustomed to a high level of disturbance such that the presence of the contractor and noise generated by construction and equipment would not result in take.

AVOIDANCE AND MINIMIZATION EFFORTS

Although nesting is not anticipated to occur within the BSA, nesting bird surveys would be performed to comply with the MBTA. Refer to Table 7 for a description of this AMM.

COMPENSATORY MITIGATION

No impacts on Western snowy plover would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.13 California Least Tern

The California least tern is a federally endangered, state endangered, Fully Protected species, and is also protected under the MBTA. This bird is the subject of the USFWS 1985 *Revised California Least Tern Recovery Plan.* There is no critical habitat designated for this species. The range of this once abundant small seabird spanned the central and southern California coast and Pacific coast of Mexico. Urban and coastal development reduced nesting habitat while leaving least tern nests vulnerable to both native and non-native predators. Their nesting colonies are greatly reduced to sites spanning the former range but the success of the colonies has relied on active management by conservationists.

California least terns nest in colonies of 30 to 50 pairs and are active from April through September. After mating, the female lays up to 3 eggs in shallow sandy or gravelly substrates near water. The young hatch in about 3 to 4 weeks. Incubation and caring for young is performed by both parents. They are capable of flight about 3 weeks after hatching and remain with the parents to learn to forage for another couple of weeks (CDFW 2002).

The closest existing California least tern colony to the BSA is located on the decommissioned Alameda Naval Air Station (Alameda NAS), approximately 6.5 miles south of the BSA. There are also established least tern colonies north of the BSA in the Napa-Sonoma Marshes Wildlife Area (22 miles from the BSA) and further south of the BSA at Hayward Regional Shoreline and Eden Landing (19 and 23 miles from the BSA, respectively). The Alameda NAS site supports California's largest colony of least terns north of San Luis Obispo County from mid-April to late August each year. This colony is one of the most consistently successful least tern breeding sites in California, representing 6% of California's least tern population and considered a significant source of the least tern for the state (Elliott et al. 2007). After the nesting season, the majority of the least tern population departs the San Francisco Bay region and is absent from the BSA vicinity by the end of August.

Intertidal and subtidal benthic habitat supporting eelgrass and shallow mudflats in the vicinity of the Alameda NAS least tern colony provide the base of a food web for invertebrates, fishes, and birds and also act as a nursery for juvenile fish. The Alameda NAS colony least terns are thought to rely heavily on the forage fish and benthic organisms associated with the eelgrass beds and mud flats in the vicinity of the colony. Generally, the least terns of the Alameda NAS colony forage within approximately 3.5 miles of the Alameda NAS colonial nesting site, in shallow waters close to shore that support appropriate prey (Atwood and Minksy 1983; Burton and

Terrill 2012). The least terns of this colony forage most intensely near-shore, to the immediate south and east of the colony (Elliot et al. 2006; Burton and Terrill 2012). Specific near-shore foraging sites include Alameda Point South, Seaplane Lagoon, Crown Beach, and San Leandro Bay, with the least terns foraging at the Alameda Point South and Seaplane Lagoon sites most frequently due to their close proximity to the colony (Elliot et al. 2006).

The BSA is located near mudflats, and there is an eelgrass bed offshore from Golden Gate Fields. However, as the BSA is greater than 3.5 miles from the nearest breeding colony at the Alameda NAS, it is likely that only a small percentage of the colony's overall foraging occurs in the vicinity of the BSA.

SURVEY RESULTS

No least terns were observed during biological resources surveys. However, database searches indicate there is low potential for this species to occur within the BSA, particularly along the shoreline of San Francisco Bay where they may forage for small fish. Although this species may infrequently forage within the BSA, nesting is not likely as the intertidal zone near the 60-inch culvert outfall is submerged under typical high tides and the area is disturbed by humans and dogs during low tides.

PROJECT IMPACTS

Modifications to the culvert outfall at the end of Gilman Street would not result in the take of individual least terns or result in nest abandonment. Nesting within the BSA is unlikely, as there are no existing colonies within the BSA. Additionally, foraging in the BSA or its vicinity is anticipated to occur sporadically, and foraging in the BSA vicinity is most likely to occur in association with the eelgrass beds near Golden Gate Fields, which are highly productive submerged aquatic habitats that likely provide more opportunities for foraging than the intertidal zone near the outfall.

AVOIDANCE AND MINIMIZATION EFFORTS

Although nesting by California least terns is not anticipated to occur within the BSA, nesting bird surveys would be performed to comply with the MBTA. Refer to Table 7 for a description of this AMM.

COMPENSATORY MITIGATION

No impacts on California least tern would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.14 Saltmarsh Common Yellowthroat

Saltmarsh common yellowthroat is a subspecies of the common yellowthroat, and this subspecies is designated as a California SSC. In addition, saltmarsh common yellowthroat are protected under the federal MBTA. This warbler is restricted to marshes and adjacent riparian woodlands of San Francisco and San Pablo bays and along the central coast of California. The historic breeding range of this species extended from Tomales Bay in Marin County south to San Jose and east to the Carquinez Strait (Grinnell and Miller 1944). Surveys have located saltmarsh common yellowthroat in Marin, Sonoma, Napa, Solano, Alameda, San Francisco, San Mateo, and Santa Clara counties (Hobson et al. 1986).

The total size of the population has been estimated to be approximately 1,000 to 2,000 individuals, although there is some uncertainty as to the exact size (Shuford and Gardali 2008). The saltmarsh common yellowthroat occupies habitats between moist wetland areas and drier upland habitats. Within the San Francisco Bay area, approximately 60% of saltmarsh common yellowthroats occupy brackish marshes, approximately 20% occupy riparian woodlands and swamps, approximately 10% occupy freshwater marshes, approximately 5% occupy salt marshes, and approximately 5% occupy upland habitats (Hobson et al. 1986, Shuford 1993, Terrill 2000). While expansive and diverse habitats may be more attractive to this subspecies, they are also known to occupy small and relatively isolated patches of habitat, such as swales and seeps, as well as drier upland environments (Hobson et al. 1986).

This subspecies nests in salt marshes, freshwater marshes, and riparian woodlands and swamps, and, less frequently, drier upland vegetation near marshes and wetlands including invasive weeds, invasive and/or non-native grasses, and shrubs like coyote brush (Shuford and Gardali 2008). Males establish territories in mid-March and begin to sing to attract females. Females arrive in mid-April and nest building begins. Nests are built about 3 feet from the base of vegetation and usually extend out over the water or damp areas. An average of four eggs are laid and incubated for 12 days. Young can leave the nest on day eight or nine once their leg bones have solidified enough to support their weight. However, at that time young are not yet independent so parents continue to feed and care for them for two weeks. Yellowthroats often lay second clutches and are usually done nesting by mid-July. At that point resident birds cease singing and defending territories and begin to move to wintering grounds in late August to early September (Foster 1976).

SURVEY RESULTS

This species was not observed during biological resources surveys. The nearest CNDDB record (#81) is from 1989 and it located approximately 4 miles to the south of the BSA near the San Francisco-Oakland Bay Bridge toll plaza. As described above, approximately 75% of saltmarsh common yellowthroats nest in marshes and approximately 20% occupy riparian woods or swamps; both of these habitat types are absent from the BSA. The remainder of saltmarsh common yellowthroats, approximately 5% of the population, nest along or near the shoreline of San Francisco Bay in upland or weedy habitats near marshes. The Bay shoreline within the BSA is not adjacent to a marsh, is frequently used for recreation by humans and their pets, and is armored with rock slope protection with limited vegetation. Based on the habitat quality within the BSA, it is unlikely that this species would occur within the BSA, but it cannot be ruled out entirely.

PROJECT IMPACTS

Construction activities near the shoreline of San Francisco Bay would be limited to work associated with modifying the 60-inch culvert outfall as well as improvements in the parking lot at the end of Gilman Street Extension near Golden Gate Fields. However, only work near the culvert outfall has the potential to disturb nesting yellowthroats or result in the take of individual yellowthroats.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMM titled Conduct Pre-construction Surveys and Biological Monitoring (Table 7), there would be no take of saltmarsh common yellowthroat. There would be no take because a protective no-work buffer would be established upon discovery of any saltmarsh common yellowthroat nests within the Project area. The buffer would be delineated using high-visibility fence or other appropriate markers surrounding each nest site while occupied. A qualified Caltrans-approved biologist would recommend an appropriate protective radius around the nest to protect normal bird behavior and prevent nesting failure or abandonment.

COMPENSATORY MITIGATION

No impacts on saltmarsh common yellowthroat would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.15 Alameda Song Sparrow

Alameda song sparrow are a California SSC, and they are protected under the MBTA. This subspecies of song sparrow is restricted to saltmarshes bordering the South San Francisco Bay, and they are non-migratory. Breeding territories of song sparrows occur along tidal sloughs and remnant isolated marshes containing pickleweed and gumplant (Walton 1974). This subspecies of song sparrow is now limited to isolated groups due to habitat fragmentation from land reclamation, salt pond construction, diking and dredging of sloughs, and urbanization. This song sparrow is physiologically adapted to drink saline water from its environment and forage for insects and invertebrates in sloughs with muddy substrate exposed during low tide.

Breeding season for the Alameda song sparrow typically begins in April. Breeding pairs are monogamous and remain close to an established territory. Nests are strategically placed to avoid flooding by high tide but low to the ground and hidden in thick vegetation so as to escape predation. Incubation occurs over a 12 to 14-day period. The young fledge in approximately 10 days and are cared for by both parents until they become fully independent in about 25 days.

SURVEY RESULTS

Song sparrows were not observed during biological resources surveys, and there are no saltmarshes within the BSA. However, literature review and database searches indicate there is low potential for this species to occur in the BSA adjacent to the San Francisco Bay. The nearest CNDDB record (#20) is located within the BSA. The occurrence is for the collection of a male sparrow in 1909 and the collection of a female in 1942. However, the record mentions the presence of another subspecies (*M. m. samuelis*), calling into question the accuracy of the identification of each song sparrow subspecies. Nevertheless, this species is presumed to be present within the BSA and its vicinity.

PROJECT IMPACTS

Impacts on Alameda song sparrow would be the same as saltmarsh common yellowthroat, as described in Section 4.3.14.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMM titled Conduct Pre-construction Surveys and Biological Monitoring (Table 7), there would be no impacts on Alameda song sparrow.

COMPENSATORY MITIGATION

No impacts on Alameda song sparrow would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.16 Bats

Several species of bats are designated as SSC by the State of California, including: pallid bat, Townsend's big-eared bat, spotted bat (*Euderma maculatum*), western red bat, and western mastiff bat (*Eumops perotis*). Of these, only pallid bat, Townsend's big-eared bat, and Western red bat have low potential to occur within the BSA. In addition to bat species listed as sensitive by the resource agencies, state laws protect bats and their occupied roosts from harassment and destruction. Protection under California Law is found in the Fish and Game Code Sections 20000, 2002, 2014 and 4150, and under California Code of Regulations Section 251.1.

Bats are commonly found in association with many habitats, often with a source of water nearby that attract insects upon which bats forage. Many bats found in California may roost in man-made structures including bridges, buildings, and mines. Bats that may utilize bridges, structures, and sometimes trees for roosting, birthing, nursing, and weaning pups, include:

- pallid bat
- Townsend's big-eared bat
- big brown bat (*Eptesicus fuscus*)
- California myotis (*Myotis californicus*)
- small-footed myotis (*M. ciliolabrum*)
- long-eared myotis (*M. evotis*)
- little brown bat (*M. lucifugus*)
- fringed myotis (*M. thysanodes*)
- long-legged myotis (*M. volans*)
- Yuma myotis (*M. yumanensis*)
- Mexican free-tailed bat (*Tadarida brasliensis*)

Some species of bats almost exclusively roost in hollowed trees, peeling bark, and tree foliage. These species require trees for some or all of the following activities, depending on the species: thermal regulation, predator avoidance, maternity roosting, and for resting between foraging flights. Bat species that depend on trees for roosting include:

- western red bat
- hoary bat (*Lasiurus cinereus*)
- silver-haired bat (*Lasionycteris noctivagans*)

Additionally, some species of bat are more closely associated with shear rock cliffs, where they roost in overhanging ledges or cracks. These species include:

- western mastiff bat
- spotted bat

SURVEY RESULTS

No focused bat surveys were conducted, and no bats were observed within the BSA during the biological resources surveys. The CNDDB does not provide a reliable representation of special-status bat species that could roost in an area for a number of reasons, including lack of a survey requirement in the past, survey data, and routine change in colony locations. However, various bat species have received special-status listings, and they are receiving increasing attention and protection.

No special-status bats, roosting bats, or indications of roosting bats, such as guano accumulations, were observed during biological resources surveys; however, the Golden Gate Fields portion of the BSA was inaccessible. It is unlikely that special-status bats would roost in the area due to the high degree of human use. However, trees, riparian vegetation along Codornices Creek, the I-80 overpass, and stables within Golden Gate Fields could provide suitable roosting habitat for special-status bats, so the potential for bats cannot be ruled out entirely.

PROJECT IMPACTS

Construction of the Project will require the removal of trees; see Section 4.2.2 for a discussion of impacts on trees. Tree-roosting bats, including Western red bat, are generally found in riparian areas in areas with abundant flying insects on which they can forage. No work within the Codornices Creek riparian corridor is proposed, and therefore no riparian trees would be removed by the Project. In the unlikely event that a landscape tree slated for removal contains roosting bats, there is potential to directly impact the bat roost if AMMs directed at protected roosting bats are not implemented. No work or modifications to the I-80 overpass are proposed and therefore, there is no potential to impact structure-roosting bats, such as pallid bat and Townsend's big-eared bat, in the overpass, if any.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMMs described in Table 7, there would be no impacts on pallid bat, Townsend's big-eared bat, Western red bat, or bat roosts. There would be no impacts because a pre-construction survey aimed at identifying the presence of roosting bats within the BSA would be performed. In the unlikely event that roosting bats are discovered within the BSA, the Project will implement exclusion devices determined in consultation with CDFW. This AMM would prevent the take of individual bats and minimize impacts on bat roosts, if any, within the BSA.

COMPENSATORY MITIGATION

No impacts on pallid bat, Townsend's big-eared bat, Western red bat, or bat roosts would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.17 Migratory Birds

The federal MBTA (16 USC 703 et seq.), Title 50 CFR part 10, and California Fish and Game Code Sections 3503, 3513, and 3800, protect the occupied nests and eggs of migratory and nongame bird species. Birds nest in a variety of places, including trees, shrubs, man-made structures, and the ground. Work buffers around migratory birds and their nests are typically needed to minimize impacts to these species. Incidental take permits are not issued under the MBTA. Any proposed project must take measures to avoid the take of any migratory and nongame birds, nests, or eggs.

SURVEY RESULTS

Nesting bushtits were observed within the riparian corridor along Codornices Creek, in the northeastern portion of the BSA. No other active bird nests, including those of special-status or Fully Protected species, were observed during biological resources surveys.

PROJECT IMPACTS

Construction of the Project has the potential to result in the take of nests, eggs, young, or individual birds protected under the MBTA and the California Fish and Game Code. Construction-related disturbance during the breeding season, including the removal of vegetation and excessive noise near an active nest, could result in the loss of fertile eggs or nestlings or otherwise lead to abandonment of nests. Incidental take permits are not authorized under the MBTA. Civil and criminal fines and penalties can be imposed for take under the MBTA (16 USC 707 et seq.). In order to prevent any impacts to bird species or to birds' active nests that are subject to the MBTA during construction, AMMs are required.

Additionally, the removal of trees and vegetation could result in the temporary loss of suitable nesting habitat. As described in Table 6, Project features include measures that would revegetate disturbed areas with a native seed mix, where appropriate. However, seed mixes used for this purpose typically do not contain trees. Therefore, the removal of trees would result in loss of nesting habitat.

AVOIDANCE AND MINIMIZATION EFFORTS

With implementation of the AMM titled Conduct Pre-construction Surveys and Biological Monitoring (Table 7), there would be no impacts on nesting birds. In addition, the AMMs described in Table 7 include replacing trees that are removed during the construction phase at a

1:1 ratio. This AMM would minimize the temporary loss in arboreal nesting habitat resulting from construction of the Project.

COMPENSATORY MITIGATION

Permanent adverse impacts to migratory and nongame bird species are not anticipated and therefore, no mitigation is proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.3.18 Marine Mammals

NOAA Fisheries is the federal agency charged with oversight of the Marine Mammal Protection Act (MMPA). The MMPA makes it illegal to take marine mammals without a permit. This means that construction of the Project may not harass, feed, hunt, capture, collect, or kill any marine mammal or part of a marine mammal. Protections afforded by the MMPA extend to species without listing under FESA or CESA. Mammals covered under the MMPA that occur in California include cetaceans (whales, dolphins, porpoise), pinnipeds (seals, sea lions), and sea otters.

SURVEY RESULTS

No marine mammals were observed during biological resources surveys. Additionally, there are no pinniped haul-outs within the BSA. However, because the BSA contains a portion of San Francisco Bay, there is low potential for species regulated under the MMPA to occur in the BSA, including the pinnipeds and cetaceans listed in Table 11.

Table 11. Species Protected under the MMPA with Potential to Occur in the BSA

Species	Stock	Conservation Status
Regular or Seasonal Occurrence in San Francisco Bay		
Pacific harbor seal *Phoca vitulina richardii*	California	Not Listed
Northern elephant seal *Mirounga angustirostris*	California Breeding	Not Listed
California sea lion *Zalophus californianus*	United States	Not Listed
Northern fur seal *Callorhinus ursinus*	California Eastern North Pacific	Not Listed Not Listed
Harbor porpoise *Phocoena phocoena*	San Francisco-Russian River	Not Listed
Common bottlenose dolphin *Tursiops truncatus*	California Coastal	Not Listed
Gray whale *Eschrichtius robustus*	Eastern North Pacific	Not Listed
Infrequent Occurrence in San Francisco Bay		
Sea otter *Enhydra lutris*	Southern (California population)	Threatened (ESA) Strategic (MMPA) Depleted (MMPA)
Steller sea lion *Eumetopias jubatus*	Eastern (California Haul-out Sites)	Threatened (FESA) Strategic (MMPA) Depleted (MMPA)
Short-beaked common dolphin *Delphinus delphis delphis*	California/Oregon/Washington	Not Listed
Fin whale *Balaenoptera physalus physalus*	California/Oregon/Washington	Endangered (FESA) Strategic (MMPA) Depleted (MMPA)
Humpback whale *Megaptera novaeangliae*	California/Oregon/Washington	Endangered (FESA) Strategic (MMPA) Depleted (MMPA)
Minke whale *Balaenoptera acutorostrata scammoni*	California/Oregon/Washington	Not Listed
Sperm whale *Physeter macrocephalus*	California/Oregon/Washington	Endangered (FESA) Strategic (MMPA) Depleted (MMPA)

Source: Caltrans 2018

PROJECT IMPACTS

Within the BSA, San Francisco Bay is a nearshore estuarine environment that is often only deep enough to support small cetaceans such as dolphins and porpoise during high tidal stages. Thus, cetaceans are generally not anticipated to be present within the BSA, though they could occur in close proximity to the BSA. Pinnipeds, most likely harbor seals or sea lions, may utilize the shoreline of San Francisco Bay as a haul-out site or for foraging. However, it is more likely that marine mammals would be attracted to the eelgrass beds located offshore from Golden Gate Fields given they are highly productive aquatic habitats that contain fish, benthic organisms, and other aquatic prey items, rather than the work area near the outfall. On this basis, the harassment or take of marine mammals protected under the MMPA is not anticipated during construction, including work associated with the 60-inch culvert outfall.

AVOIDANCE AND MINIMIZATION EFFORTS

Although the harassment or take of marine mammals is not anticipated, AMMs in Table 7 include Conduct Pre-construction Surveys and Biological Monitoring. This AMM would require a qualified Caltrans-approved biologist to conduct pre-construction surveys directed at determining whether marine mammals are present within the BSA. If a marine mammal is present and close enough to the work site such that harassment may result from the presence of the contractor or construction activities, the Resident Engineer would stop work or otherwise implement conditions in regulatory permits and approvals to prevent harassment. No additional AMMs beyond those described in Table 7 are proposed for marine mammals.

COMPENSATORY MITIGATION

No impacts on marine mammals would occur and therefore, compensatory mitigation is not proposed.

CUMULATIVE IMPACTS

No adverse cumulative impacts are anticipated to result from implementation of the Project. For a discussion of cumulative impacts from the Project as a whole, refer to Section 4.4.

4.4 Cumulative Impacts

For purposes of FESA Section 7 consultation, the definition of cumulative effects are those effects of future state or private activities not involving federal activities that are reasonably certain to occur within the BSA that is subject to consultation with NOAA Fisheries and/or USFWS.

Regulations implementing the procedural provisions of NEPA define cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or persons undertakes such other actions” (40 CFR sec 1508.7).

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

Reasonably foreseeable future and present projects within 1 mile of the BSA are summarized in Table 12. The projects described in Table 12 include transportation improvements, parks and recreation improvements, residential development as well as mixed-use projects. Of these project categories, parks and recreation improvements are the most likely to impact biological resources. In general, transportation, residential, and mixed-use projects would occur in urban or previously-developed areas that contain little to no habitat of ecological value, whereas parks and recreation projects involve the modification of open spaces that may provide habitat for special-status or otherwise protected biological resources.

Although there is potential for parks and recreation improvements to impact biological resources, any project that may impact federally listed or state listed species will undergo environmental review with USFWS, NOAA Fisheries, and/or CDFW to avoid or minimize potential impacts on biological resources. Projects that occur within any wetland or “Waters of the U.S.” would be required to obtain permits from the USACE and RWQCB. These permits would ensure that the projects would not result in a net loss of “Waters of the U.S.” or unnecessary impacts on water quality. Any ecological impacts resulting from these projects would be mitigated as part of the environmental review and permitting process.

Considering the reasonably foreseeable future and present projects listed in Table 12 as well as the proposed Project features and AMMs lsited in Table 6 and Table 7, Caltrans has determined the Project would result in a negligible contribution to adverse cumulative impacts on protected habitats or special-status species. Species with potential to be temporarily impact by Project construction activities in San Francisco Bay, including birds, special-status fish, and managed fisheries, would seek suitable habitat elsewhere in San Francisco Bay and adjacent habitats to the north, west, and south of the Project site. Disturbed habitat areas will be restored to pre-construction conditions following completion of construction activities to the greatest extentpracticable.

Several of the projects listed in Table 12 would likely result in permanent beneficial effects on biological resources. The APIP project would directly benefit estuarine habitat along the eastern shoreline of San Francisco Bay by increasing tidal circulation within the Berkeley Aquatic Park, which is anticipated to result in higher quality aquatic habitat from improved water quality. The McLaughlin Eastshore State Park Brickyard Construction project would improve the habitats of a previously disturbed area along the Berkeley waterfront by enhancing existing wetlands and beaches, by removing non-native vegetation, and planting native vegetation. Beach enhancements may result in beneficial impacts on California least tern and snowy plover, both of which may roost or nest in beach habitats. Additionally, invasive species in upland habitats, including a meadow, would be removed. These improvements to the Berkeley Aquatic Park and the San Francisco Bay shoreline would improve coastal habitats, including wetlands and uplands.

Table 12. Major Projects within 1 Mile of the Biological Study Area

Name	Jurisdiction	Proposed Uses	Status
Transportation Projects			
University Ave Overcrossing (Increase Vertical Clearance Project, EA 2K830)	City of Berkeley, Caltrans	This project will increase the vertical clearance at the I-80/University Avenue overcrossing to current standard (16.5’) by either raising or replacing the existing structure. This will require raising or replacing the on and off-ramps as well as the adjacent bridge in order to match the new elevation.	Planning
Ashby Ave Connector (Increase Vertical Clearance Project EA 25260)	Cities of Berkeley and Emeryville, Caltrans	The project proposes to reconstruct the Ashby Avenue interchange, which is bordered by Frontage Road and San Francisco Bay to the west, an industrial/commercial/residential section of Emeryville to the southeast and Berkeley’s Aquatic Park to the northeast. This project will provide a direct connection between westbound Interstate 80 (I-80) and Emeryville by way of Shellmound Street and will include: a new bridge to replace existing bridges; a roundabout interchange; and provision of bicycle and pedestrian access over the I-80 freeway at the Ashby Avenue interchange.	Planning
MBGR Replacement Project Between University and Ashby in Berkeley (EA 4G230)	Caltrans	The project would replace sections of Metal Beam Guard Rail, temporary railing Type K, and Type-50 concrete barrier with new Type 60 and Type 732 Concrete Barrier with chain link fences at the eastbound I-80 between the Potter Street on-ramp and University Avenue off-ramp.	Categorical exemption/exclusion signed April 16, 2018
I-80 Safety Lighting & Median Barrier (EA 3J700)	Caltrans	The project proposes to install a median concrete barrier to mitigate glare impact, double luminaire mast arm lighting, and high mast light poles to provide uniform luminosity on I-80 in Alameda County between SR 13 and 0.4 miles east of El Cerrito separation.	Planning; first admin Draft Environmental Document review completed
Park and Recreation Projects			
Aquatic Park Improvement Program (APIP)	City of Berkeley	The APIP consists of a series of capital improvements to Aquatic Park that will improve the hydrology and water quality of the lagoons, wetland and upland habitat, and user amenities, such as improved pathways, seating, overlooks, interpretive signage, etc. Phase I addresses the water quality and some of the habitat improvements by increasing the water circulation and tidal exchange to bring cooler, more saline Bay water into the lagoons, which will improve habitat for invertebrates and fish, and the birds that feed on them. Phase I also includes removing invasive non-native plant species and replanting with appropriate native plants. Phases 2 through 4 will further improve the upland habitat and will provide user amenities.	Planning and design phase (Draft Environmental Impact Report [EIR] 2012; Final EIR under preparation)
Proposed Fieldhouse at Tom Bates Regional Sports Complex	City of Berkeley	The preliminary vision of the fieldhouse building consists of a restroom, a meeting room, and a storage area, with a priority on ease of access from the fields, minimal impact to parking, and good security.	Planning and design phase

Table 12. Major Projects within 1 Mile of the Biological Study Area

Name	Jurisdiction	Proposed Uses	Status
McLaughlin Eastshore State Park Brickyard Construction	City of Berkeley, East Bay Regional Park District	Plans are in development for walking trails, picnic areas, restrooms and parking.	Construction begins Fall 2018, completed Summer 2019
Berkeley Marina Capital Improvement Program	City of Berkeley	Transformative and impactful projects are in progress at the Berkeley Waterfront and more are on their way. The University Avenue realignment and reconfiguration will improve the road that is the gateway to the Waterfront. Evaluations of the beloved Berkeley Pier are in progress, studying options that would allow this resource to be reopened to the public. A new public restroom, windsurfing area, and landscaped parking lot are under construction at the South Cove Sailing Basin. The Bay Trail is being extended to the Adventure Playground. In FY 2018 and FY 2019, proposed projects focus on dock and restroom improvements, as well as landscape and real estate planning efforts.	Varies from planning to construction
Albany Beach Restoration and Public Access Project	Cities of Albany and Berkeley	The project involves the construction of a 4,983-foot long (0.94-mile) segment of the Bay Trail between the termini of Buchanan and Gilman Streets; the expansion of a recreational beach; and the improvement of associated park facilities.	Area 1 completed June 2016; Areas 2 and 3 permitting and construction planned for Summer 2018
Residential Projects			
1461-1463 5th Street	City of Berkeley	New townhomes	Completed
600 Addison Street	City of Berkeley	The project applicant is requesting approval of a master use permit to allow redevelopment of the project site with a total of up to 475,000 gross square feet of research and development uses and office uses with associated parking, circulation, utility, and landscaping improvements. In addition, the project is requesting the conversion of approx. 8,000 square feet of protected warehouse space that was previously removed from the site. Two potential development schemes are currently proposed, with a varied number of buildings and parking and circulation improvements; both schemes, referred to as scheme 1 (which includes seven buildings) and scheme 2 (includes five buildings) will be evaluated fully in the EIR.	Notice of Preparation review ended 11/27/2017

Table 12. Major Projects within 1 Mile of the Biological Study Area

Name	Jurisdiction	Proposed Uses	Status
Multi-Use Development Projects			
1900 4th Street	City of Berkeley	Redevelopment of the site with a mix of residential and commercial uses totaling 207,590 gross square feet, as well as associated parking and circulation (148,200 gross square feet), open space and landscaping (16,090 square feet), and utility improvements. The proposed uses would be located within two separate buildings, a three-story building at the corner of 4th Street and Hearst Avenue, and a one- to five-story building on the balance of the site. Approximately 118,370 square feet of residential uses (135 dwelling units) would be located on the second level and above; commercial uses would total approximately 33,080 gross square feet and would be located on the ground level.	Under review with Planning Department
1320 9th Street	City of Berkeley	Create a laboratory/manufacturing facility within existing warehouse.	Permit issued
1285 Eastshore Highway	City of Berkeley	Installation of new Verizon cell tower.	Completed
2100 San Pablo Avenue Residential Care Facility for the Elderly	City of Berkeley	The project involves demolishing the existing two single-story commercial buildings, and construction 75,064 square feet and include 96 residential units (67 studio suits, 20 one-bedroom suites, and 9 two-bedroom suites) group dining and activity rooms, admission offices, staff lounge, wellness and meditation rooms, caregiver stations, a lobby/great room, and a cafeteria. Outdoor space would include a center courtyard measuring 2,174 square feet and outdoor decks on each floor measuring 5,049 total square feet. The center courtyard would abut and be level with the R-1 residential zoning district at the western property line. The proposed commercial component of the project, which would be on the ground floor fronting San Pablo Ave, would include a beauty salon (319 square feet) an art and craft studio (654 square feet) and a geriatric wellness center (853 square feet) intended to serve both residents and the elderly in general. In addition, a corner restaurant (1,500 square feet) would serve both the RCFE residents and the general public. Construction would occur over approx. 18-22 months.	Negative Declaration, end of review 11/13/2017

Source: City of Berkeley Planning Department, 2016; ceqanet.com, 2016; City of Berkeley Parks Recreation and Waterfront Department, 2018; East Bay Regional Park District, 2018

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Chapter 5 Conclusions and Regulatory Determinations

This chapter contains a summary of the federal, State, and local regulations, agreements, and agency policies that are relevant to the proposed Project and the related required permits.

5.1 Federal Endangered Species Act Consultation Summary

As stated in Section 2.4, official species lists were obtained from the USFWS San Francisco Bay-Delta and Sacramento offices through the Information for Planning and Consultation online system on April 11, 2018. Also, on April 11, 2018, a species list was generated using the California Species List Tools, available through NOAA Fisheries West Coast Region website.

Evaluations of federally listed species resulted in a total of two species with "no effect" and five species with "may affect, but not likely to adversely affect" determinations. Project features and AMMs are proposed that would avoid and minimize effects on federally listed wildlife species resulting from construction of the Project. Section 7 consultation with NOAA Fisheries will be conducted by Caltrans. Table 13 summarizes the Project's impact on federally listed species.

Table 13. Summary of Effects Determinations for Federally Listed Wildlife

Species	Federal Status	Potential to Occur	Effects Finding for Federally-listed Species
Green sturgeon – southern DPS	FT	Low	May affect, but not likely to adversely affect.
Steelhead – central California coast DPS	FT	Low	May affect, but not likely to adversely affect.
Steelhead –Central Valley DPS	FT	Low	May affect, but not likely to adversely affect.
Chinook salmon – Central Valley spring run ESU	FT	Low	May affect, but not likely to adversely affect.
Chinook salmon – Sacramento River winter run ESU	FE	Low	May affect, but not likely to adversely affect.
Western snowy plover	FT	Low	No effect. No potential for take.
California least tern	FE	Low	No effect. No potential for take.

5.2 Essential Fish Habitat Consultation Summary

Project-related activities in San Francisco Bay have the potential to affect Essential Fish Habitat protected by the Magnuson-Stevens Fishery Conservation and Management Act. As described in Section 4.1.6, the entire San Francisco Bay is classified as Essential Fish Habitat for species managed under the Pacific Coast Salmon Fishery Management Plan (FMP; coho and Chinook salmon) and also for species managed under the Coastal Pelagic Species FMP and Pacific Coast Groundfish FMP. Essential Fish Habitat consultation with NOAA Fisheries is anticipated to be concurrent with Section 7 consultation.

5.3 California Endangered Species Act Consultation Summary

Table 14 summarizes the species listed under CESA with potential to occur in the BSA. With implementation of Project features and AMMs, the Project would not impact CESA-listed species. On this bases, an Incidental Take Permit is not required. No consultation with CDFW has occurred to date.

Table 14. Summary of Special-Status Wildlife with Potential to Occur in the BSA

Species	State Status	Potential to Occur
Chinook salmon – Central Valley spring run ESU	ST	Low
Chinook salmon – Sacramento River winter run ESU	SE	Low
California least tern	SE	Low

5.4 Wetlands and Other Waters Coordination Summary

As stated in Section 2.4, a wetland delineation was performed in 2016, and the report was submitted to the USACE. Caltrans subsequently submitted a memorandum to clarify the findings of the wetland delineation and to provide additional information regarding the provenance of potential wetlands in the Project area. Following submittal of the memorandum, the BSA map was revised to exclude a potential jurisdictional feature, and the revised map was submitted to the USACE. The USACE issued an Approved Jurisdictional Determination based on the 2016 wetland delineation report, memorandum, and revised BSA map. The Approved Jurisdictional Determination is dated March 16, 2018, under File Number 2017-00207S. Correspondence with USACE described above is provided as Appendix D. Additionally, a wetland delineation addendum was prepared in 2018 that encompassed areas that have been added to the BSA since the original wetland delineation was performed in 2016; refer to Appendix E for the wetland delineation addendum. The USACE performed a field review to verify additional information provided in the wetland delineation addendum in October 2018. During the field visit the USACE requested that the text and maps be revised to reflect the removal of Codornices Creek from the BSA. A revised addendum was submitted to the USACE on November 13, 2018. An approved Jurisdictional Determination was received on November 30, 2018.

5.4.1 Section 404 of the Clean Water Act

The only water resource within the BSA that is subject to regulation under Section 404 of the CWA is San Francisco Bay. Construction activities include the placement of fill below the HTL of San Francisco Bay, which would require a permit under CWA Section 404. All potential USACE jurisdictional features are also considered to be “Waters of the State.”

5.4.2 Section 401 of the Clean Water Act

A Section 401 permit is necessary when a Project requires a 404 permit from the USACE. Therefore, a Section 401 permit from the San Francisco Bay RWQCB is required for work in San Francisco Bay.

5.5 Invasive Species – Executive Order (13112)

Nineteen non-native invasive plant species were identified within the BSA that have moderate- or high-risk impacts on native plant populations (Cal-IPC 2017). Fourteen are listed as having moderate (substantial and apparent) impacts, and five are ranked as having high (severe) impacts. Those listed as high-risk include foxtail chess, hottentot fig, pampas grass, English ivy, and Himalayan blackberry.

As discussed in Section 4.2.3, the Project will comply with Executive Order 13112. This order is designed to prevent the introduction of invasive species and provide for their control in order to minimize economic, ecological, and human health impacts. In the event that high- or medium-priority noxious weeds were disturbed or removed during construction-related activities, the contractor would contain the plant material and dispose of it in a manner that will not promote the spread of the species. The contractor would be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials.

5.6 Other

5.6.1 San Francisco Bay Conservation and Development Commission Jurisdiction

BCDC regulates and establishes policies for Bay fill, use of the Bay and shoreline area, and public access to the Bay and along the Bay shoreline. BCDC jurisdiction includes the open water, marshes, and mudflats of the greater San Francisco Bay, and portions of most creeks, rivers, sloughs, and other tributaries subject to tidal action that flow into San Francisco Bay as well as salt ponds, managed wetlands, and a shoreline band that extends inland for 100 feet from the San Francisco Bay shoreline. Because portions of the Project are located within BCDC jurisdiction, a permit from BCDC will be required. An initial consultation meeting is scheduled for January 2019 to discuss the project.

5.6.2 Migratory Bird Treaty Act

As described in Section 4.3.17, all migratory and non-game bird species are protected under the MBTA. Caltrans would comply with the MBTA through the proposed AMMs described in Table 7. Through implementation of the proposed AMMs, the take of nests, eggs, young or individuals of bird species is not anticipated.

5.6.3 California Fish and Game Code

The majority of birds and mammals found in the BSA are protected under California Fish and Game Codes 3503-3505, 3513, and 3800. Section 4150 states that all non-game mammals or parts thereof may not be taken or possessed, except as provided otherwise in the code or in accordance with guidelines adopted by the CDFW. Activities resulting in mortality of non-game mammals or disturbances that cause the loss of maternity colonies of bats may be considered “take” by the CDFW. The AMMs implemented to protect special-status species and bats discussed in this NES would also protect non-game animals.

5.6.4 Senate Bill 857 Fish Passage

Senate Bill 857 requires Caltrans to remediate barriers to salmon and steelhead habitat on the State highway system. As described in Section 3.1.3, the Gilman Street watershed consists entirely of underground drainage culverts. Historic watershed maps indicate that the 60-inch RCP and associated tributary drainage systems do not represent a creek or creeks that were historically placed into underground drainage pipes. Although fish or other aquatic species may incidentally enter these underground pipes in the existing condition, the pipes do not provide connectivity to any upstream aquatic habitat either currently or historically. On this basis, the installation of a tidal flap gate on the outfall of the Gilman Street watershed is not considered to be a barrier to fish passage.

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WRECO. 2018. I-80/Gilman Street Interchange Improvement Project Water Quality Assessment Report.

Appendix A USFWS, CNPS, CNDDB, and NOAA Species Lists and Maps

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
San Francisco Bay-Delta Fish And Wildlife
650 Capitol Mall
Suite 8-300
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Phone: (916) 930-5603 Fax: (916) 930-5654
http://kim_squires@fws.gov

In Reply Refer To: October 18, 2018
Consultation Code: 08FBDT00-2018-SLI-0187
Event Code: 08FBDT00-2019-E-00040
Project Name: Interstate 80/Gilman Street Interchange

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

San Francisco Bay-Delta Fish And Wildlife
650 Capitol Mall
Suite 8-300
Sacramento, CA 95814
(916) 930-5603

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08FBDT00-2018-SLI-0187

Event Code: 08FBDT00-2019-E-00040

Project Name: Interstate 80/Gilman Street Interchange

Project Type: TRANSPORTATION

Project Description: Interchange improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.87836351948595N122.30695679437571W

Counties: Alameda, CA

Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5524	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Callippe Silverspot Butterfly *Speyeria callippe callippe* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3779	Endangered
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered

Flowering Plants

NAME	STATUS
California Seablite *Suaeda californica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6310	Endangered
Pallid Manzanita *Arctostaphylos pallida* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8292	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: October 18, 2018
Consultation Code: 08ESMF00-2018-SLI-1814
Event Code: 08ESMF00-2019-E-00379
Project Name: Interstate 80/Gilman Street Interchange

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

San Francisco Bay-Delta Fish And Wildlife
650 Capitol Mall
Suite 8-300
Sacramento, CA 95814
(916) 930-5603

Project Summary

Consultation Code: 08ESMF00-2018-SLI-1814

Event Code: 08ESMF00-2019-E-00379

Project Name: Interstate 80/Gilman Street Interchange

Project Type: TRANSPORTATION

Project Description: Interchange improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.87836351948595N122.30695679437571W

Counties: Alameda, CA

Endangered Species Act Species

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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Mammals

NAME	STATUS
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Birds

NAME	STATUS
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California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5524	Threatened
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Callippe Silverspot Butterfly *Speyeria callippe callippe* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3779	Endangered
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered

Flowering Plants

NAME	STATUS
California Seablite *Suaeda californica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6310	Endangered
Pallid Manzanita *Arctostaphylos pallida* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8292	Threatened
Santa Cruz Tarplant *Holocarpha macradenia* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6832	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Quad Name	**San Quentin**
Quad Number	**37122-H4**
Date	**October 18, 2018**
Source	**Nmfs_wcr_ca_species_list_december_2016.kmz**

ESA Anadromous Fish

SONCC Coho ESU (T) -	
CCC Coho ESU (E) -	**X**
CC Chinook Salmon ESU (T) -	
CVSR Chinook Salmon ESU (T) -	**X**
SRWR Chinook Salmon ESU (E) -	**X**
NC Steelhead DPS (T) -	
CCC Steelhead DPS (T) -	**X**
SCCC Steelhead DPS (T) -	
SC Steelhead DPS (E) -	
CCV Steelhead DPS (T) -	**X**
Eulachon (T) -	
sDPS Green Sturgeon (T) -	**X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -	
CCC Coho Critical Habitat -	**X**
CC Chinook Salmon Critical Habitat -	
CVSR Chinook Salmon Critical Habitat -	
SRWR Chinook Salmon Critical Habitat -	**X**
NC Steelhead Critical Habitat -	
CCC Steelhead Critical Habitat -	**X**
SCCC Steelhead Critical Habitat -	
SC Steelhead Critical Habitat -	
CCV Steelhead Critical Habitat -	
Eulachon Critical Habitat -	
sDPS Green Sturgeon Critical Habitat -	**X**

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds - **X**

Quad Name **Richmond**
Quad Number **37122-H3**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat - **X**
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - **X**
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -	**X**
Chinook Salmon EFH -	**X**
Groundfish EFH -	**X**
Coastal Pelagics EFH -	**X**
Highly Migratory Species EFH -	

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

Quad Name **Briones Valley**
Quad Number **37122-H2**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -	**X**
Chinook Salmon EFH -	**X**
Groundfish EFH -	
Coastal Pelagics EFH -	
Highly Migratory Species EFH -	

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

Quad Name **San Francisco North**
Quad Number **37122-G4**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - **X**
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - **X**
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat - **X**
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - **X**
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) - **X**
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - **X**

Olive Ridley Sea Turtle (T/E) - X
Leatherback Sea Turtle (E) - X
North Pacific Loggerhead Sea Turtle (E) - X

ESA Whales

Blue Whale (E) - X
Fin Whale (E) - X
Humpback Whale (E) - X
Southern Resident Killer Whale (E) - X
North Pacific Right Whale (E) - X
Sei Whale (E) - X
Sperm Whale (E) - X

ESA Pinnipeds

Guadalupe Fur Seal (T) - X
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - X
Chinook Salmon EFH - X
Groundfish EFH - X
Coastal Pelagics EFH - X
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

Quad Name **Oakland West**
Quad Number **37122-G3**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat - **X**
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - **X**
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -	**X**
Chinook Salmon EFH -	**X**
Groundfish EFH -	**X**
Coastal Pelagics EFH -	**X**
Highly Migratory Species EFH -	

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds - **X**

Quad Name **Oakland East**
Quad Number **37122-G2**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - **X**
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -	**X**
Chinook Salmon EFH -	**X**
Groundfish EFH -	**X**
Coastal Pelagics EFH -	**X**
Highly Migratory Species EFH -	

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Richmond (3712283) OR Oakland East (3712272) OR Oakland West (3712273) OR San Francisco North (3712274) OR San Quentin (3712284) OR Briones Valley (3712282))
 AND Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Arctostaphylos franciscana Franciscan manzanita	PDERI040J3	Endangered	None	G1	S1	1B.1
Arctostaphylos montana ssp. ravenii Presidio manzanita	PDERI040J2	Endangered	Endangered	G3T1	S1	1B.1
Arctostaphylos pallida pallid manzanita	PDERI04110	Threatened	Endangered	G1	S1	1B.1
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Calochortus tiburonensis Tiburon mariposa-lily	PMLIL0D1C0	Threatened	Threatened	G1	S1	1B.1
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Carex praticola northern meadow sedge	PMCYP03B20	None	None	G5	S2	2B.2
Castilleja affinis var. neglecta Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1T2	S1S2	1B.2
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T4	S2	2B.1
Cirsium andrewsii Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cirsium hydrophilum var. vaseyi Mt. Tamalpais thistle	PDAST2E1G2	None	None	G2T1	S1	1B.2
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
Clarkia franciscana Presidio clarkia	PDONA050H0	Endangered	Endangered	G1	S1	1B.1
Collinsia corymbosa round-headed Chinese-houses	PDSCR0H060	None	None	G1	S1	1B.2
Collinsia multicolor San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Eriogonum luteolum var. caninum Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
Eryngium jepsonii Jepson's coyote-thistle	PDAPI0Z130	None	None	G2	S2	1B.2
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gilia capitata ssp. chamissonis blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Grindelia hirsutula var. maritima San Francisco gumplant	PDAST470D3	None	None	G5T1Q	S1	3.2
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperolinon congestum Marin western flax	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
Heteranthera dubia water star-grass	PMPON03010	None	None	G5	S2	2B.2
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2?	S2?	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Hypogymnia schizidiata island tube lichen	NLT0032640	None	None	G2	S1	1B.3
Isocoma arguta Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
Layia carnosa beach layia	PDAST5N010	Endangered	Endangered	G2	S2	1B.1
Leptosiphon rosaceus rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
Lessingia germanorum San Francisco lessingia	PDAST5S010	Endangered	Endangered	G1	S1	1B.1
Meconella oregana Oregon meconella	PDPAP0G030	None	None	G2G3	S2	1B.1
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Pentachaeta bellidiflora white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	PDBOR0V061	None	None	G3T1Q	S1	1B.2
Plagiobothrys diffusus San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
Plagiobothrys glaber hairless popcornflower	PDBOR0V0B0	None	None	GH	SH	1A
Polemonium carneum Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Sanicula maritima adobe sanicle	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Silene verecunda ssp. verecunda San Francisco campion	PDCAR0U213	None	None	G5T1	S1	1B.2
Spergularia macrotheca var. longistyla long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2
Stebbinsoseris decipiens Santa Cruz microseris	PDAST6E050	None	None	G2	S2	1B.2
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Streptanthus glandulosus ssp. niger Tiburon jewelflower	PDBRA2G0T0	Endangered	Endangered	G4T1	S1	1B.1
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Suaeda californica California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triphysaria floribunda San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 67

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Richmond (3712283) OR Oakland East (3712272) OR Oakland West (3712273) OR Briones Valley (3712282) OR San Francisco North (3712274) OR San Quentin (3712284))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Adela oplerella Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S3	
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061	None	None	G3G4T1	S1	
Egretta thula snowy egret	ABNGA06030	None	None	G5	S4	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Enhydra lutris nereis southern sea otter	AMAJF09012	Threatened	None	G4T2	S2	FP
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
Hydroprogne caspia Caspian tern	ABNNM08020	None	None	G5	S4	
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lichnanthe ursina bumblebee scarab beetle	IICOL67020	None	None	G2	S2	
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Melospiza melodia maxillaris Suisun song sparrow	ABPBXA301K	None	None	G5T3	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Melospiza melodia pusillula Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2S3	SSC
Melospiza melodia samuelis San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
Microcina leei Lee's micro-blind harvestman	ILARA47040	None	None	G1	S1	
Microcina tiburona Tiburon micro-blind harvestman	ILARA47060	None	None	G1	S1	
Microtus californicus sanpabloensis San Pablo vole	AMAFF11034	None	None	G5T1T2	S1S2	SSC
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Plebejus icarioides missionensis Mission blue butterfly	IILEPG801A	Endangered	None	G5T1	S1	
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Scapanus latimanus insularis Angel Island mole	AMABB02032	None	None	G5THQ	SH	
Scapanus latimanus parvus Alameda Island mole	AMABB02031	None	None	G5THQ	SH	SSC
Sorex vagrans halicoetes salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
Speyeria callippe callippe callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S3	
Trachusa gummifera San Francisco Bay Area leaf-cutter bee	IIHYM80010	None	None	G1	S1	
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Vespericola marinensis Marin hesperian	IMGASA4140	None	None	G2	S2	
Xanthocephalus xanthocephalus yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC
Zapus trinotatus orarius Point Reyes jumping mouse	AMAFH01031	None	None	G5T1T3Q	S1S3	SSC

Record Count: 67

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

81 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3712273, 3712283, 3712284, 3712274 3712272 and 3712282;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5?T3T4
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	Feb-May	4.3	S4	G4
Arctostaphylos franciscana	Franciscan manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	1B.1	S1	G1
Arctostaphylos montana ssp. ravenii	Presidio manzanita	Ericaceae	perennial evergreen shrub	Feb-Mar	1B.1	S1	G3T1
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen shrub	Dec-Mar	1B.1	S1	G1
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	1B.1	S1	G1
Aspidotis carlotta-halliae	Carlotta Hall's lace fern	Pteridaceae	perennial rhizomatous herb	Jan-Dec	4.2	S3	G3
Astragalus nuttallii var. nuttallii	ocean bluff milk-vetch	Fabaceae	perennial herb	Jan-Nov	4.2	S4	G4T4
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Calamagrostis ophitidis	serpentine reed grass	Poaceae	perennial herb	Apr-Jul	4.3	S3	G3
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
Calochortus tiburonensis	Tiburon mariposa lily	Liliaceae	perennial bulbiferous herb	Mar-Jun	1B.1	S1	G1
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	4.2	S3?	G3?
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	Convolvulaceae	perennial herb	(Mar)Apr-Sep	1B.2	S2S3	G4T2T3
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Carex praticola	northern meadow sedge	Cyperaceae	perennial herb	May-Jul	2B.2	S2	G5

Castilleja affinis var. neglecta	Tiburon paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	1B.2	S1S2	G4G5T1T2
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	4.2	S4	G4T5
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	1B.2	S2	G4?T2
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	Polygonaceae	annual herb	Apr-Jul(Aug)	1B.2	S1	G2T1
Chorizanthe robusta var. robusta	robust spineflower	Polygonaceae	annual herb	Apr-Sep	1B.1	S1	G2T1
Cirsium andrewsii	Franciscan thistle	Asteraceae	perennial herb	Mar-Jul	1B.2	S3	G3
Cirsium hydrophilum var. vaseyi	Mt. Tamalpais thistle	Asteraceae	perennial herb	May-Aug	1B.2	S1	G2T1
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	(Apr)May-Jun(Jul)	4.3	S3	G5?T3
Clarkia franciscana	Presidio clarkia	Onagraceae	annual herb	May-Jul	1B.1	S1	G1
Collinsia corymbosa	round-headed Chinese-houses	Plantaginaceae	annual herb	Apr-Jun	1B.2	S1	G1
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	(Feb)Mar-May	1B.2	S2	G2
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	1B.2	S2	G2
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	1B.2	S2	G5T2
Eriophorum gracile	slender cottongrass	Cyperaceae	perennial rhizomatous herb (emergent)	May-Sep	4.3	S4	G5
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?
Erysimum franciscanum	San Francisco wallflower	Brassicaceae	perennial herb	Mar-Jun	4.2	S3	G3
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss		1B.2	S2	G3?
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
Gilia capitata ssp. chamissonis	blue coast gilia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G5T2
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	1B.2	S2	G2
Grindelia hirsutula var. maritima	San Francisco gumplant	Asteraceae	perennial herb	Jun-Sep	3.2	S1	G5T1Q
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	1B.2	S2	G5T2
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	1B.1	S1	G1
Heteranthera dubia	water star-grass	Pontederiaceae	perennial herb (aquatic)	Jul-Oct	2B.2	S2	G5
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	May-Jul(Aug-	1B.1	S2?	G2?

				Oct)			
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	1B.1	S1	G1
Horkelia cuneata var. sericea	Kellogg's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.1	S1?	G4T1?
Hypogymnia schizidiata	island rock lichen	Parmeliaceae	foliose lichen (null)		1B.3	S1	G2
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May	4.2	S3	G3
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Layia carnosa	beach layia	Asteraceae	annual herb	Mar-Jul	1B.1	S2	G2
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	4.2	S4?	G4?
Leptosiphon rosaceus	rose leptosiphon	Polemoniaceae	annual herb	Apr-Jul	1B.1	S1	G1
Lessingia germanorum	San Francisco lessingia	Asteraceae	annual herb	(Jun)Jul-Nov	1B.1	S1	G1
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	3	S3?	G3?
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	Mar-Apr	1B.1	S2	G2G3
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	3.2	S3S4	G3G4
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	1B.2	S2	G2
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	3	S1S3	G4T1T3Q
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	(Feb)Mar-Jul	1B.2	S3	G3
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	1B.1	S1	G1
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	Apr-Aug	4.2	S3	G3
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.2	S1	G3T1Q
Plagiobothrys diffusus	San Francisco popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.1	S1	G1Q
Polemonium carneum	Oregon polemonium	Polemoniaceae	perennial herb	Apr-Sep	2B.2	S2	G3G4
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	3.1	S2	G2Q
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Sanicula maritima	adobe sanicle	Apiaceae	perennial herb	Feb-May	1B.1	S2	G2
Silene verecunda ssp. verecunda	San Francisco campion	Caryophyllaceae	perennial herb	(Feb)Mar-Jun(Aug)	1B.2	S1	G5T1
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	1B.2	S2	G5T2
Stebbinsoseris decipiens	Santa Cruz microseris	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	1B.2	S2	G2T2
Streptanthus glandulosus ssp. niger	Tiburon jewelflower	Brassicaceae	annual herb	May-Jun	1B.1	S1	G4T1

Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S3	G5T5
Suaeda californica	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	1B.1	S1	G1
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Triphysaria floribunda	San Francisco owl's-clover	Orobanchaceae	annual herb	Apr-Jun	1B.2	S2?	G2?
Triquetrella californica	coastal triquetrella	Pottiaceae	moss		1B.2	S2	G2
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5

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Appendix B Representative Photos

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Photo 1. Looking South toward 60-inch Culvert Outfall at the end of Gilman Street during Low Tide

Photo 2. Looking East toward 60-inch Culvert Outfall at the end of Gilman Street during a Rising Tide

Photo 3. Looking Northwest along Gilman Street Extension toward Parking Lot near Golden Gate Fields

Photo 4. Looking North toward 60-inch Culvert Outfall, Stables at Golden Gate Fields, and Parking Lot at Tom Bates Sports Complex

Photo 5. Grassland South of Tom Bates Sports Complex, Looking North

Photo 6. Looking Southeast along San Francisco Bay Trail adjacent to Tom Bates Sports Complex

Photo 7. Looking North along San Francisco Bay Trail toward Gilman Street

Photo 8. Looking North along West Frontage Road toward I-80

Photo 9. Looking East toward I-80/Gilman Street Interchange from San Francisco Bay Trail

Photo 10. Looking West toward I-80/Gilman Street Interchange

Photo 11. Looking North along UPRR Corridor from Gilman Street

Photo 12. Looking North-Northwest toward end of Fifth Street and Codornices Creek

Photo 13. End of Fifth Street Looking North-Northwest toward Codornices Creek

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Appendix C Observed Species

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Observed Vegetation		
Scientific Name	**Common Name**	**Native/Non-native**
Achillea millefolium	common yarrow	Native
Ailanthus altissima	tree of heaven	Non-native
Allium triquetrum	white flowered onion	Non-native
Anaphalis margaritacea	pearly everlasting	Native
Aristolochia californica	California pipevine	Native
Avena fatua	wild oat	Non-native
Baccharis pilularis	coyote brush	Native
Brassica nigra	black mustard	Non-native
Bromus diandrus	ripgut brome	Non-native
Bromus hordeaceus	soft brome	Non-native
Bromus madritensis	foxtail chess	Non-native
Carduus pycnocephalus	Italian thistle	Non-native
Carpobrotus edulis	hottentot fig	Non-native
Ceanothus sp.	Ceanothus sp.	Native
Cortaderia jubata	pampas grass	Non-native
Cotoneaster pannosus	cotoneaster	Non-native
Cynodon dactylon	Bermuda grass	Non-native
Echium candicans	pride of Madeira	Non-native
Equisetum arvense	common horsetail	Native
Erodium moschatum	Musky stork's bill	Non-native
Eschscholzia californica	California poppy	Native
Eucalyptus globulus	blue gum	Non-native
Festuca perennis	Italian rye grass	Non-native
Festuca sp.	Reed grass	Non-native
Foeniculum vulgare	sweet fennel	Non-native
Galium aparine	common bedstraw	Native
Geranium dissectum	cut leaved geranium	Non-native
Geranium molle	Dove's foot geranium	Non-native
Hedera helix	English ivy	Non-native
Helminthotheca echioides	bristly ox-tongue	Non-native
Hesperocyparis macrocarpa	Monterey cypress	Native
Heteromeles arbutifolia	toyon	Native
Hordeum murinum	foxtail barley	Non-native
Juncus sp.	rush sp.	Native
Linum bienne	narrow leaved flax	Non-native
Lupinus ssp.	lupine	Native
Lysimachia arvensis	scarlet pimpernel	Non-native
Malva nicaeensis	bull mallow	Non-native
Medicago sativa	Alfalfa	Non-native
Medicago sp.	clover sp.	Non-native
Melilotus indicus	Annual yellow sweetclover	Non-native
Olea europaea	Olive tree	Non-native

Observed Vegetation (continued)		
Scientific Name	**Common Name**	**Native/Non-native**
Oxalis pes-caprae	Bermuda buttercup	Non-native
Phoenix canariensis	Canary Island date palm	Non-native
Plantago coronopus	cut leaf plantain	Non-native
Plantago lanceolata	narrow leaved plantain	Non-native
Platanus racemosa	California sycamore	Native
Populus fremontii	Fremont cottonwood	Native
Quercus agrifolia	Coast live oak	Native
Raphanus sativus	wild radish	Non-native
Rosmarinus officinalis	rosemary	Non-native
Rubus armeniacus	Himalayan blackberry	Non-native
Rumex crispus	curly dock	Non-native
Salix lasiolepis	arroyo willow	Native
Sisyrinchium bellum	Western blue eyed grass	Native
Solanum sp.	nightshade sp.	Unknown
Sonchus oleraceus	common sow thistle	Non-native
n/a	Landscape tree	Unknown
n/a	Bulb sp.	Non-native
Vicia gigante	Giant vetch	Native

Observed Wildlife		
Scientific Name	**Common Name**	**Native/Non-native**
Branta canadensis	Canada goose	Native
Anas platyrhynchos	Mallard	Native
Numenius phaeopus	Whimbrel	Native
Larus occidentalis	Western gull	Native
Columba livia	Rock pigeon	Non-native
Calypte anna	Anna's hummingbird	Native
Corvus brachyrhynchos	American crow	Native
Poecile rufescens	Chestnut-backed chickadee	Native
Psaltriparus minimus	Bushtit	Native
Sturnus vulgaris	European starling	Non-native
Zonotrichia leucophrys	White-crowned sparrow	Native
Zonotrichia atricapilla	Golden-crowned sparrow	Native
Agelaius phoeniceus	Red-winged blackbird	Native
Euphagus cyanocephalus	Brewer's blackbird	Native
Otospermophilus beecheyi	California ground squirrel	Native
Papilio rutulus	Western tiger swallowtail	Native
Danaus plexippus	Monarch butterfly	Native

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Appendix D Wetland Delineation Report, Correspondence with USACE, and Jurisdictional Determination

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I-80/Gilman Street Interchange Improvement Project

DELINEATION OF WATERS OF THE UNITED STATES

Caltrans District 04

04-ALA-80-PM 6.4/6.82

EA 04-0A7700 / Project ID 0400020155

Revised August 2017

I-80 GILMAN INTERCHANGE IMPROVEMENT PROJECT

Caltrans

ALAMEDA County Transportation Commission

CITY OF BERKELEY

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DELINEATION OF WATERS OF THE UNITED STATES

I-80/Gilman Street Interchange Improvement Project

Caltrans District 04

04-ALA-80-PM 6.4/6.82

EA 04-0A7700 / Project ID 0400020155

Revised August 2017

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Table of Contents

Figures

Tables

Photos

Appendices

Acronyms

Alameda CTC	Alameda County Transportation Commission
Bay Trail	San Francisco Bay Trail
BCDC	San Francisco Bay Conservation and Development Commission
bgs	below ground surface
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
ºF	degrees Fahrenheit
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
HOV	High Occupancy Vehicle
ICM	Integrated Corridor Mobility
I-	Interstate
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NL	not listed
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
OBL	obligate
OHWM	ordinary high water mark
PG&E	Pacific Gas and Electric
Project	I-80/Gilman Street Interchange Improvement Project
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
TCE	temporary construction easements
TDM	Transportation Demand Management
TSM	Transportation System Management
UPL	upland
UPRR	Union Pacific Railroad
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1 INTRODUCTION

The California Department of Transportation (Caltrans) and the Alameda County Transportation Commission (Alameda CTC) propose the Interstate (I-) 80/Gilman Street Interchange Improvement Project (Project) to improve traffic, pedestrian, and bicycle operations at the I-80/Gilman Street interchange in Berkeley in Alameda County, California.

The purpose of the proposed Project is to:

- Simplify and improve the navigation, mobility, and traffic operations at the I-80/Gilman Street interchange.
- Reduce congestion, vehicle queues and conflicts at the I-80/Gilman Street Interchange.
- Improve local and regional bicycle connections and pedestrian facilities through the I-80/Gilman Street interchange.
- Improve safety for all modes of transportation.

1.1 Project Description

This section describes the proposed action and the Project alternatives developed to meet the identified purpose and need of the Project, while avoiding or minimizing environmental impacts. The two alternatives include the Roundabout Alternative and the No Build Alternative.

The Project is located in Alameda County at the I-80/Gilman Street interchange in the City of Berkeley (Post Miles 6.4 to 6.82). Within the limits of the proposed Project, I-80 is a conventional 10-lane freeway with 12-foot lanes and 11-foot shoulders. Gilman Street is a 4-lane major arterial with 11-foot lanes and 6-foot shoulders that passes underneath I-80. The I-80/ Gilman Street interchange is a four-lane arterial roadway (Gilman Street), with two lanes in the east/west direction that are intersected with four I-80 on- and off-ramps, West Frontage Road, and the Eastshore Highway. The purpose of the Project is to simplify and improve navigation, mobility and traffic operations, reduce congestion, vehicle queues and conflicts, improve local and regional bicycle connections and pedestrian facilities, and improve safety at the I-80/Gilman Street interchange. Current conditions, along with an overall increase in vehicle traffic, have created poor, confusing, and unsafe operations in the interchange area for vehicles, pedestrians, and bicyclists.

1.1.1 Project Alternatives

Two Project alternatives are proposed for consideration, as described below. One build alternative, the Roundabout Alternative, was developed to meet the identified purpose and need of the Project, while avoiding or minimizing environmental impacts. The second alternative is the No Build Alternative. The alternatives will be evaluated based upon Project cost, including life cycle costs, vehicle miles traveled and other traffic data, and impacts to the environment, such as community and land use impacts, cultural resources, floodplains, wetlands, greenhouse gas emissions, and special-status species. The general Project vicinity is shown in Figure 1; the specific Project location is shown in Figure 2.

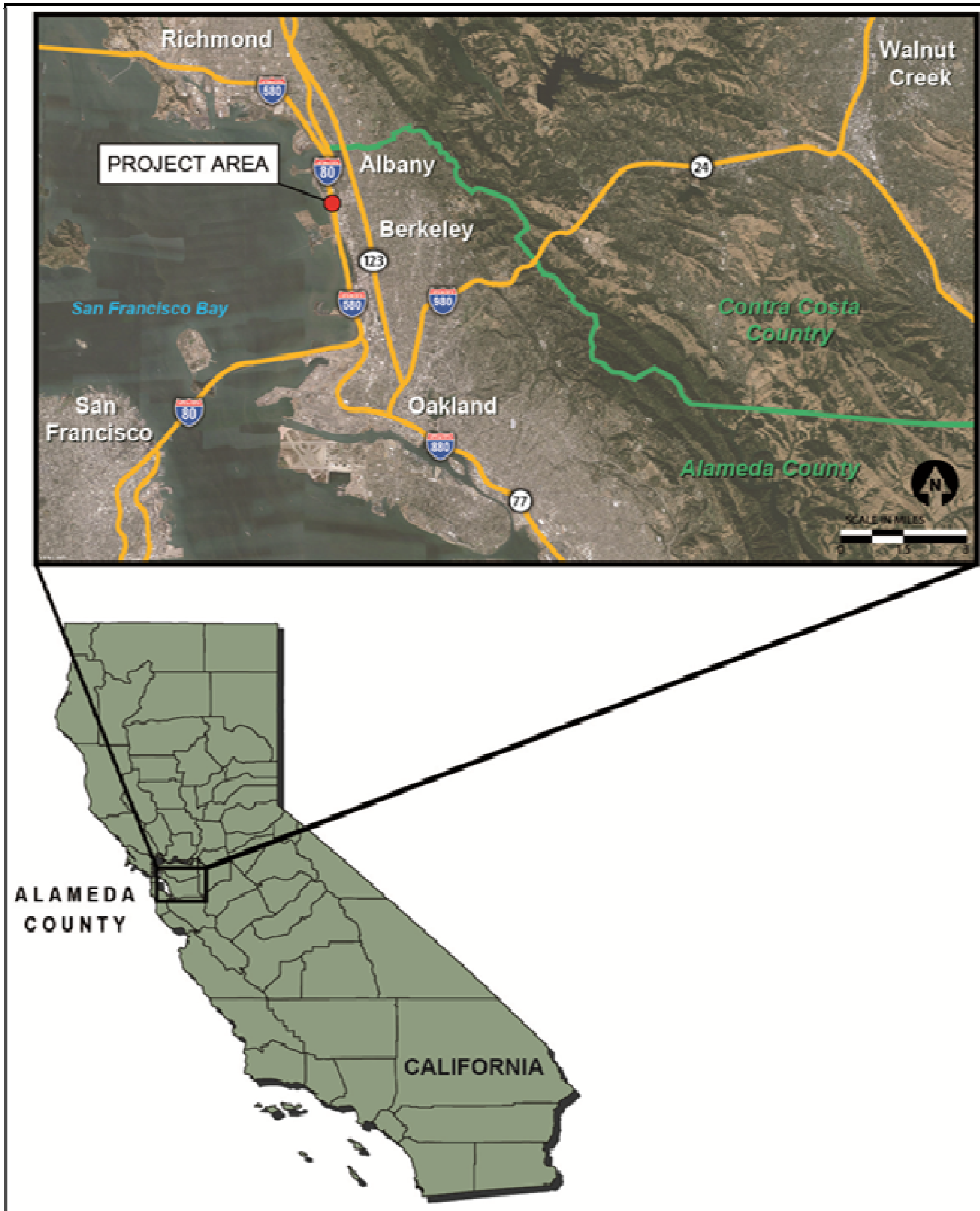

Figure 1. Project Vicinity

Source: Parsons

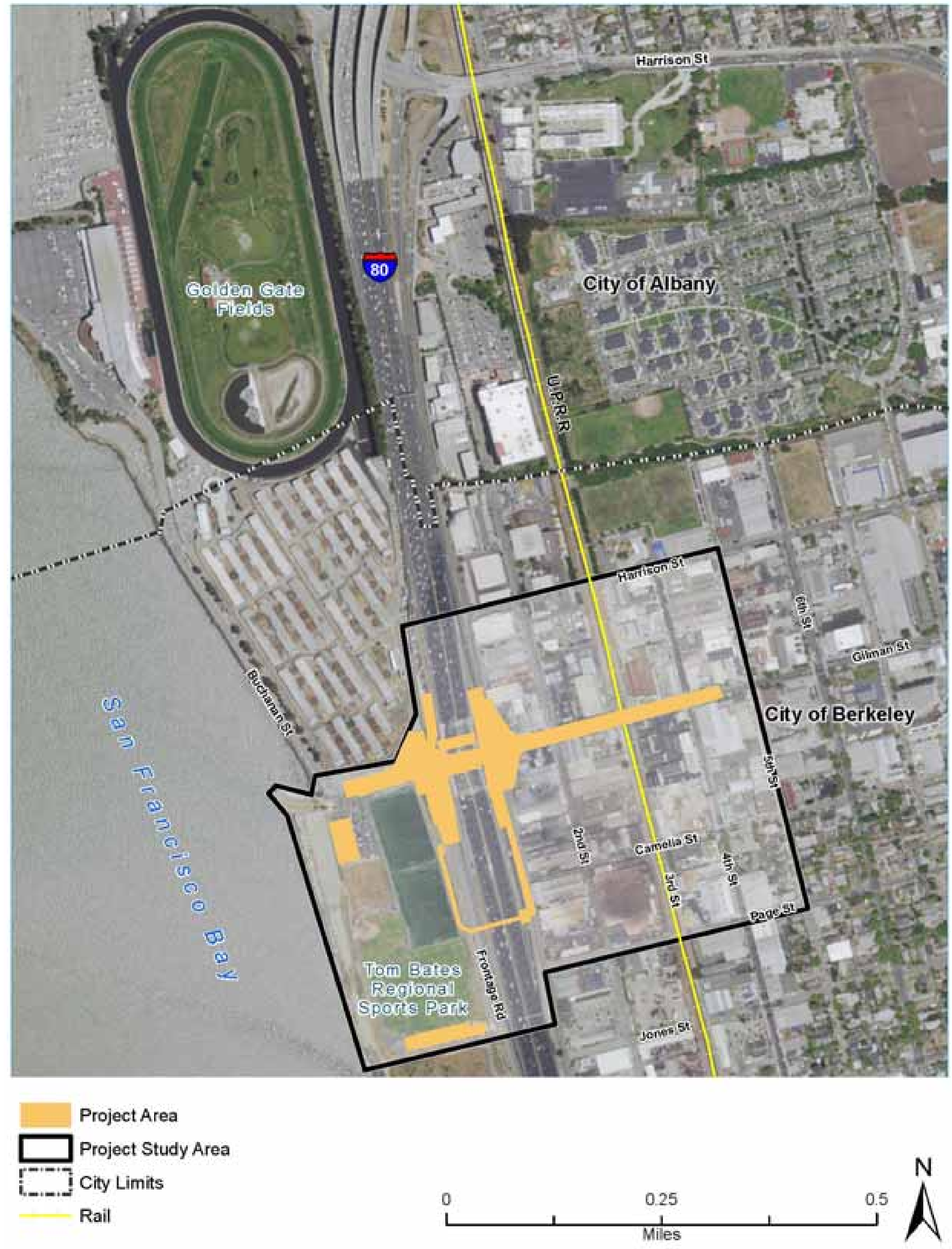

Figure 2. Project Location

Source: Parsons

1.1.1.1 Roundabout Alternative

The Roundabout Alternative includes the reconfiguration of I-80 ramps and intersections at Gilman Street. The existing non-signalized intersection configuration with stop-controlled ramp terminuses would be replaced with two hybrid single-lane roundabouts with multilane portions on Gilman Street at the I-80 ramp terminals. The I-80 ramps and frontage road intersections at each ramp intersection would be combined to form one single roundabout intersection. Gilman Street would be reconstructed from approximately 300 feet west of West Frontage Road to approximately 100 feet east of 4th Street. Work would also include reconstruction of West Frontage Road and Eastshore Highway to allow for the minimum amount of spacing between ramp intersections and local intersections. In addition, Eastshore Highway would be converted from two lanes to one lane entering the roundabout in order to reduce the number of conflicts. During this reconfiguration, pavement preservation (mill and overlay) would be implemented.

These improvements associated with the installation of the roundabouts would extend approximately 340 feet south on West Frontage Road from the Gilman Street Interchange and 650 feet north and 1,100 feet south on Eastshore Highway from the Gilman Street Interchange. Work associated with the reconfiguration of the eastbound I-80 off-ramp and on-ramp would extend 800 feet south and 250 feet north, respectively. Work associated with the reconfiguration of the westbound I-80 off-ramp and on-ramp would extend 300 feet north and 210 feet south, respectively. There are no proposed improvements to the freeway mainline.

All existing connections from minor streets would be maintained under the Roundabout Alternative with the exception of the southbound and northbound movements onto Eastshore Highway. These movements would instead be made via 2nd Street to Page Street or 2nd Street to Harrison Street, respectively. The western roundabout intersection would consist of four approaching legs: eastbound and westbound Gilman Street, West Frontage Road and I-80 westbound off-ramp. The eastern roundabout intersection would include a total of five approaching legs: I-80 eastbound off-ramp, northbound and southbound Eastshore Highway, and eastbound and westbound Gilman Street. Left-turn pockets would be provided on Gilman Street for vehicles turning onto 2nd Street. The Roundabout Alternative is shown in Figure 3.

Pedestrian and Bicycle Facilities

A shared-use Class I path for pedestrians and bicyclists would be constructed on the south side of the Gilman Street undercrossing. A Class I path consists of a 10-foot-wide travel way with two foot wide shoulders on either side of the path and provides for a completely separated right-of-way for bikes and pedestrian use. The shared-use path would extend south along Eastshore Highway, where it would then connect to a proposed bicycle/pedestrian overcrossing. The overcrossing would be constructed over I-80, merging into the existing San Francisco Bay Trail (Bay Trail) that runs parallel to West Frontage Road. The shared-use path would terminate at the Bay Trail on the west and at the eastern roundabout on the east side of the Project. From the eastern roundabout, it would join a two-way cycle track and the existing sidewalk.

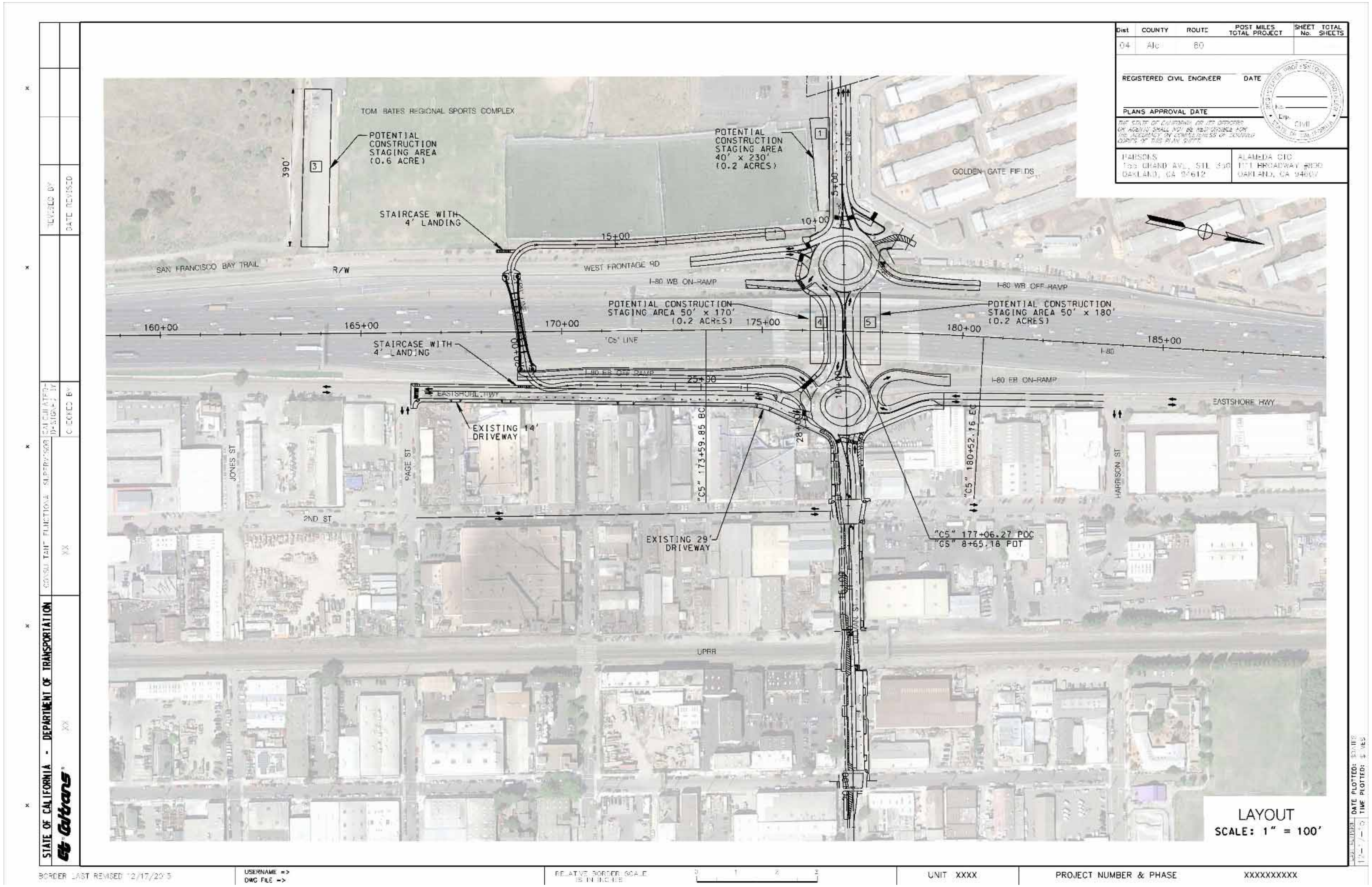

Figure 3. Roundabout Alternative Layout Sheet

Source: Parsons

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The Roundabout Alternative also includes a two-way cycle track on the south side Gilman Street between the eastern roundabout and 4th Street. The two-way cycle track is separated from vehicle traffic with a minimum 3-foot striped buffer and a parking lane in some locations. This facility would connect the bicycle lanes to the pedestrian overcrossing and to the Class I Bay Trail facility along West Frontage Road. The addition of the two-way cycle track would require a signal to be installed at the intersection of 4th Street and Gilman Street. The northern curb line on Gilman Street would also be shifted 2 to 5 feet north. Along Eastshore Highway, the sidewalk, curb, and gutter would be replaced between Page Street and Gilman Street.

West of the interchange, the existing Bay Trail would be extended west along the south side of Gilman Street from its current terminus at the intersection of West Frontage Road and Gilman Street. Improvements to the Bay Trail under the proposed Project would end 100 feet from the shoreline, outside of the San Francisco Bay Conservation and Development Commission (BCDC) jurisdiction. The proposed Bay Trail extension would be 10 feet wide, un-striped, with 2-foot wide unpaved shoulders on either side of the trail. This extension would eventually tie into a related project that East Bay Regional Parks District is undertaking to extend the Bay Trail from the north, terminating at Golden Gate Fields. As currently designed, this would leave a small gap (175 feet) in the Bay Trail, between the end of the trail at Golden Gate Fields and the end of the trail on the south side of Gilman Street. East Bay Regional Parks District, or a related agency, would be responsible for planning, designing, and constructing this 175-foot gap in the Bay Trail. These proposed improvements can be seen in Figure 3.

The bicycle/pedestrian overcrossing would be similar to the existing bicycle/pedestrian overcrossing over I-80 at University Avenue. The structure would have a minimum of three spans with a maximum span length of approximately 230 feet over I-80. The foundations for the pedestrian bridge would be located on 2-foot diameter Cast-In-Drilled-Hole piles 120 feet below the existing ground surface. There would be two staircases incorporated into the overcrossing, one on each side of I-80. They would be approximately 45 feet long with a height of 25 feet to connect to the overcrossing. There would also be retaining walls on the east and west side of the overcrossing; they would be approximately 6 feet tall at the highest point and taper down to zero. The maximum depth of the retaining wall piles are expected to be 50 feet below the ground surface.

Golden Gate Fields Access

The existing driveway entrance to the Golden Gate Fields is located immediately adjacent to the westbound I-80 off-ramp at the end of the curb return. The construction of the roundabout would expand the ramp intersection to the north and provide adequate truck turning for the range of vehicles that access the fields.

Partial Property Acquisitions

Construction of the roundabout would require partial acquisition of adjacent properties for the Project right-of-way. These would be required between the San Francisco Bay Trail and the Tom Bates Sports Complex (APN: 60-2529-1-3) for the bicycle/pedestrian overcrossing. Additionally, an easement from Golden Gate Fields (APN: 60-2535-1) would be required in order to modify access. Temporary construction easements (TCEs) would be required for construction equipment storage and laydown from the Tom Bates Sports Complex. Additional partial acquisitions may also be required from other parcels in order to construct the Project. No businesses or residences would be displaced.

Utilities, Landscaping, and Drainage
Existing Pacific Gas and Electric (PG&E) overhead electric lines along Gilman Street, West Frontage Road, and Eastshore Highway would be relocated under the Roundabout Alternative. Some of these overhead lines may be placed underground to enhance the gateway theme for the interchange. Minor drainage modifications would also be required to conform to the new roundabout alignment. Utility relocations and new drainage systems may require trenching to a depth of approximately 6 feet. Light pole foundations would be 2 feet in diameter and would range from 5 to 13 feet deep in the vicinity of the roundabout. An existing EBMUD recycled water transmission line will be relocated and extended as part of the Project. Approximately 1,100 feet of a new 12-inch recycled water transmission pipeline within Eastshore Highway from Page Street to Gilman Street and approximately 1,050 feet of pipeline within Gilman Street from 2nd Street to the Buchanan Street extension are part of the Build Alternative. The maximum excavations for the pipe trench will be approximately 24 inches by 60 inches deep. Approximately 1,100 feet of an existing 10-inch EBMUD recycled water pipeline located within Caltrans right of way along the eastbound Gilman Street off-ramp shoulder will be abandoned in place or removed.

Existing vegetation is sparse and consists of ornamental plantings or ruderal vegetation. The Build Alternative would remove existing landscaping and trees on the sidewalk along Eastshore Highway from Page Street to Gilman Street. In addition, trees and/or shrubs would be removed at the I-80 off-ramps, westbound I-80 on-ramp, and along the San Francisco Bay Trail. Opportunities for new landscaping or artwork would be available in the center of each roundabout.

Union Pacific Railroad Improvements
The City of Berkeley would like to grade separate the intersection of Gilman Street and the UPRR crossing at 3rd Street as a separate, future project. The proposed project improvements are not currently funded. All improvements would not preclude or inhibit this future grade separation.

Construction Activities

Construction Hours. Construction work for the Roundabout Alternative would be done primarily during daylight hours from 7:00 a.m. to 6:00 p.m.; however, there may be some work during night-time hours to avoid temporary roadway closures for tasks that could interfere with traffic or create safety hazards. Examples of these tasks include striping operations, traffic control setup, installation of storm drain crossings, and asphalt pavement mill and overlay.

Road Closures and Detours. Temporary lane and ramp closures and detours would occur. It is anticipated that temporary closure of existing bicycle or pedestrian facilities would occur at times, and may require temporary rerouting of transit service due to intersection work. A Transportation Management Plan would be developed and implemented as part of the Project construction planning phase. The Transportation Management Plan would address potential impacts to circulation of all modes (transit, bicycles, pedestrians, and private vehicles). Roadway and/or pedestrian access to all occupied businesses and respective parking lots would be maintained during Project construction. The Transportation Management Plan would include an evaluation of potential impacts as a result of diverting traffic to alternate routes, and it would also include measures to minimize, avoid and/or mitigate impacts to alternate routes, such as agreements with local agencies to provide enhanced infrastructure on arterial roads or intersections to deal with detoured traffic. The Transportation Management Plan may provide for contracting with local agencies for traffic personnel, especially for special event traffic through or near the construction zone.

Staging Location. The anticipated construction staging areas available include areas within the existing roadway right-of-way construction limits. An additional staging area may be required west of the Project on Gilman Street in one or two parking lots owned by East Bay Regional Parks. All staging areas would be located outside of BCDC jurisdiction.

Construction Equipment. The following equipment is anticipated to be used during construction: auger drill rig, backhoe, compactor, concrete pump, crane, dozer, excavator, front end loader, grader, heavy duty dump trucks, jackhammer, vibratory roller, and pavement breaker.

1.1.1.2 Transportation System Management (TSM) and Transportation Demand Management (TDM)

Transportation System Management and Transportation Demand Management measures alone could not satisfy the purpose and need of the Project. The following TSM and TDM measures have been incorporated into the build alternative for this Project: bicycle and pedestrian improvements. In addition, the build alternative would connect to the newly constructed I-80 Integrated Corridor Mobility (ICM) project. The I-80 ICM represents one of the most comprehensive Intelligent Transportation Systems in the state, implementing a network of integrated electronic signs, ramp meters and other state-of-the-art elements between the Carquinez Bridge and the Bay Bridge to enhance motorist safety, improve travel time reliability and reduce accidents and associated congestion.

1.1.1.3 No Build Alternative

The No Build Alternative consists of the future conditions with transportation improvements only as currently planned and programmed for funding. The No Build Alternative provides a basis for comparing the build alternatives. Under the National Environmental Policy Act (NEPA), the No Build Alternative can be used as the baseline for comparing environmental impacts; under the California Environmental Quality Act (CEQA), the baseline for environmental impact analysis consists of the existing conditions at the time the environmental studies began.

1.1.1.4 Alternatives Considered But Eliminated From Further Discussion

Additional alternatives have been studied and reviewed by Project stakeholders during the Project alternative development phase, including a signalized intersection alternative, roundabout alternative with bypass ramps, construction of a pedestrian and bicyclist undercrossing, and alternate access to Golden Gate Fields.

The signalized intersection alternative was eliminated from further discussion because of engineering, right-of-way, and cost constraints. Under the signalized intersection alternative, there would not have been sufficient space for left-turn pockets under the I-80 Undercrossing, and it would have required removal and replacement of the structure. This would have caused significant traffic impacts and inconvenience for motorists. In addition, the cost of this alternative renders it infeasible.

An additional Roundabout Alternative with bypass lanes was also eliminated from further discussion. This alternative would have been similar to the proposed Roundabout Alternative, except for the addition of two bypass ramps under the Gilman Undercrossing. The bypass ramps would have been constructed underneath the I-80 freeway structure between the abutment and columns to provide direct connection between the roundabouts and the I-80 eastbound and westbound on-ramps. This would have caused access from the east leg of Eastshore Highway to Gilman Street to be permanently closed to make room for the bypass ramp. This alternative was eliminated because of the constraints regarding sight distance, and lateral clearance to the abutments, limitations on turning radius and shoulder widths, restrictions for high-occupancy vehicle (HOV) placement on on-ramps, and increased confusion for drivers entering and exiting the roundabout.

Concepts developed during the early Project development phase called for pedestrian and bicycle shared-used paths on the north and south side of the Gilman Street undercrossing. Currently, there is a significant volume of right-turn traffic entering the I-80 eastbound on-ramp from northbound Gilman Street at a relatively high speed. It is difficult and unsafe for pedestrians and bicyclists to cross the ramp, especially during peak hours. Design review revealed that the non-motorists and motorists conflict at the eastbound on-ramp is intense for the future scenarios given the high volume of ramp traffic and the need for a two-lane crossing. Because there are few pedestrians and bicyclists currently using the north path to access the northeast side of the interchange where Golden Gate Fields is located, the north shared-use path was removed from consideration with Project stakeholders and the bicycle group’s input.

Alternate access to Golden Gate Fields was evaluated and discussed with the owner, Golden Gate Fields. The alternatives included eliminating access to Gilman Street by connecting the existing entrance to the access road along the Buchanan Street Extension, and relocating the entrance 250 feet to the west of its current location. Golden Gate Fields management requested that access be maintained directly into the roundabout. These alternate entrances were removed from consideration based upon the owner’s request and the Project Development Team’s input.

2 REGULATORY FRAMEWORK

This chapter describes the sections of the federal and State laws that regulate aquatic features within the Study Area. The Study Area was designed to extend potentially outside of the Project in order to ensure that the entire Project footprint is characterized (Figure 4).

2.1 Federal Regulations

2.1.1 Section 404 of the Clean Water Act

Wetlands and other water resources (e.g., rivers, streams, and natural basins) are a subset of federal "waters of the U.S." and receive protection under Section 404 of the Clean Water Act (CWA). The United States (U.S.) Army Corps of Engineers (USACE) has the primary federal responsibility for administering regulations that concern waters and wetlands. The USACE acts under two statutory authorities: the Rivers and Harbors Act (Sections 9 and 10), which governs specified activities in "navigable waters," and the CWA (Section 404), which governs specified activities in "waters of the U.S.," including wetlands.

The USACE and the U.S. Environmental Protection Agency (EPA) define wetlands as "areas that are 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 the life in saturated soil conditions. Wetlands generally include swamps, marches, bogs, and similar areas" (Environmental Laboratory 1987).

The term "waters of the United States" is defined in 33 *Code of Federal Regulations* (CFR) Part 328.3(a) and 40 CFR Part 230.3(s) as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation of destruction of which could affect interstate or foreign commerce including any such waters:
    I. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    II. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    III. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.

Figure 4. Study Area Map

The term “other waters of the U.S.” is used to characterize water bodies, such as intermittent streams, that do not meet the full criteria for wetlands designation.

2.1.1.1 Other Waters of the U.S.

The limits of USACE jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows: a) territorial seas: 3 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 (OHWM) or to the limit of adjacent wetlands; and d) wetlands: to the limit of the wetland. The USACE jurisdiction in non-tidal areas extends to the OHWM, 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)

2.1.2 Rapanos v. United States and Carabell v. Army Corps of Engineers

Two cases recently brought before the U.S. Supreme Court, *Rapanos v. United States* (No. 04-1034) and *Carabell v. Army Corps of Engineers* (No. 04-1384), challenged the USACE’s interpretation of waters of the U.S. (USACE and EPA 2007). The two cases are hereafter referred to jointly as *Rapanos*. USACE had interpreted the CWA, 33 United States Code 1362(7), to regulate wetland areas that are separated from a tributary of a navigable water by a narrow, constructed berm where evidence of an occasional hydrologic connection exists between the wetland and the tributary. *Rapanos* also questioned congressional authority under the Commerce Clause to apply the CWA to the wetlands at issue in the case.

On June 19, 2006, the court held 5 to 4 in favor of tightening the definition of “waters of the U.S.” The decision stated that a water or wetland constitutes “navigable waters” under the CWA if it possesses a “significant nexus” to waters that are currently navigable or could feasibly be made navigable. The case has been remanded to determine whether such a nexus exists.

USACE and the EPA issued a joint memorandum on June 5, 2007, that included new guidelines for establishing whether wetlands and other waters of the U.S. fall within USACE jurisdiction (USACE and EPA 2007). The memorandum asserted USACE and EPA jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries to traditional navigable waters that are relatively permanent waters, and wetlands that abut relatively permanent waters, wetlands that are adjacent to non-relatively permanent waters, and wetlands adjacent to, but not directly abutting a relatively permanent non-navigable tributary. The agencies generally do not assert jurisdiction over swales, erosional features, or ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

2.1.3 Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers et al.

In 2001, the U.S. Supreme Court issued a decision in the *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers et al.* (No. 99-1178). The case involved the filling of hydrologically isolated waters that had formed from remnant excavation ditches on a 533-acre parcel. In the decision, the court denied USACE jurisdiction over isolated water bodies, which the USACE had previously regulated using the “Migratory Bird Rule” of 1986. The court defined an isolated water as any body of water that is non-navigable, intrastate, and lacking any significant nexus to navigable bodies of water (Pooley 2002).

2.2 Regional Water Quality Control Board

The California Water Code defines “waters of the State” as “any surface water or groundwater, including saline waters, within the boundaries of the state” (Section 13050[e]). According to the State Water Resources Control Board (SWRCB), this includes all waters of the U.S. and is “broadly construed to include all waters within the state’s boundaries, whether private or public, including waters in both natural and artificial channels” (SWRCB 2015).

The SWRCB protects the beneficial uses of surface water and groundwater in California under the Porter-Cologne Act, with a focus on water quality. The Regional Water Quality Control Boards (RWQCBs) regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The San Francisco Bay RWQCB may exercise jurisdiction over discharges into waters of the State pursuant to the Porter-Cologne Act, in cases where the waters are excluded from regulation under the federal CWA. No formal protocol exists for delineating waters of the State.

2.3 Wetlands and Other Waters Potentially Exempt from USACE Jurisdiction

A number of exemptions from CWA regulations exist for areas that would otherwise qualify as waters of the U.S. These exemptions are classified as discretionary or non-discretionary exemptions.

2.3.1 Discretionary Exemptions

As described in the preamble discussion of USACE regulations in November 13, 1986, *Federal Register*, areas that meet the technical definition of wetlands generally are not considered waters of the U.S. (33 CFR 328.3[a]). However, the USACE and EPA reserve the right to determine that a particular water body within the categories listed below is a water of the U.S. Such areas include:

- Non-tidal drainage and irrigation ditches excavated on dry land
- Artificially irrigated areas that would revert to upland if the irrigation ceased
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and that are used exclusively for purposes such as stock watering, irrigation, settling basins, and rice growing

- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water primarily for aesthetic reasons
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the U.S. (USACE 1986).

Features such as roadside ditches, drainage ditches, and irrigation canals that appear to have been excavated in uplands and do not convey or connect to other waters of the U.S. are considered non-jurisdictional waters under the new USACE methodology. Many of these features are located in areas with little or no topography, indicating a flow path to a seasonal stream (a stream that flows for about 3 months a year) that eventually discharges to a traditional navigable water. Canals and ditches that do not maintain a flow connection with a traditional navigable water are considered isolated. Canals that transport water from relatively permanent waters that do not reconnect or recirculate water back to relatively permanent waters draining to a traditional navigable water are not considered jurisdictional. Likewise, any artificial drainage ditch that drains upland to a relatively permanent water is non-jurisdictional. An exception to this may be a flood-irrigated field watered by a jurisdictional canal that is found to drain to a ditch leading to relatively permanent waters connected to a traditional navigable water.

2.3.2 Non-Discretionary Exemptions

USACE regulations contain a non-discretionary exemption for waste treatment systems designed to meet the requirements of the CWA (33 CFR 328.3[a][7]). The systems, including treatment ponds and lagoons, are not considered waters of the U.S.

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3 METHODS

This section describes the methods utilized to delineate waters of the U.S. (including wetlands) and waters of the State.

3.1 Wetlands Delineation

Prior to conducting the field surveys, reference materials were reviewed, including the *Soil Survey of Alameda County, California, Western Part* (U.S. Department of Agriculture [USDA] 1975); the Richmond and Oakland West U.S. Geological Survey (USGS) 7.5' quadrangle maps; the *National Wetlands Inventory* (U.S. Fish and Wildlife Service [USFWS] 2016) as shown in Figure 5; and aerial photos of the site. A field survey was conducted on May 18, 2016, within the Study Area.

The three parameters used to delineate wetlands are the presence of: 1) hydrophytic vegetation, 2) wetland hydrology, and 3) hydric soils. According to the USACE Wetlands Delineation Manual (USACE Manual [Environmental Laboratory 1987]), for areas not considered "problem areas" or "atypical situations," in order to make a positive wetland determination, there must be evidence of at least one positive wetland indicator from each parameter.

The Arid West Region supplement to the USACE Manual (USACE 2008) is applicable to the portion of California containing the Project area. The Arid West Region supplement includes procedures for identifying wetlands that may lack indicators due to natural processes (problem areas) or recent disturbances (atypical situations). Problem area wetlands are defined as naturally occurring wetland types that periodically lack indicators of hydrophytic vegetation, hydric soil, or wetland hydrology due to normal seasonal or annual variability. Some problem area wetlands may permanently lack certain indicators due to the nature of the soils or plant species on the site. Atypical situations are defined as wetlands in which vegetation, soil, or hydrology indicators are absent due to recent human activities or natural events. Atypical situations may also affect the normal circumstances of a site, or conditions and functions that are relatively permanent.

Three features within the Study Area were evaluated for the presence or absence of indicators of the three parameters. Paired sample points were collected to characterize the wetland-upland boundary. The boundary was primarily determined by a shift in plant species composition and hydric soil. Vegetation was also documented within this area to determine whether wetland vegetation indicators were present. The methods for evaluating the presence of waters of the U.S. employed during the site visits are described in detail below.

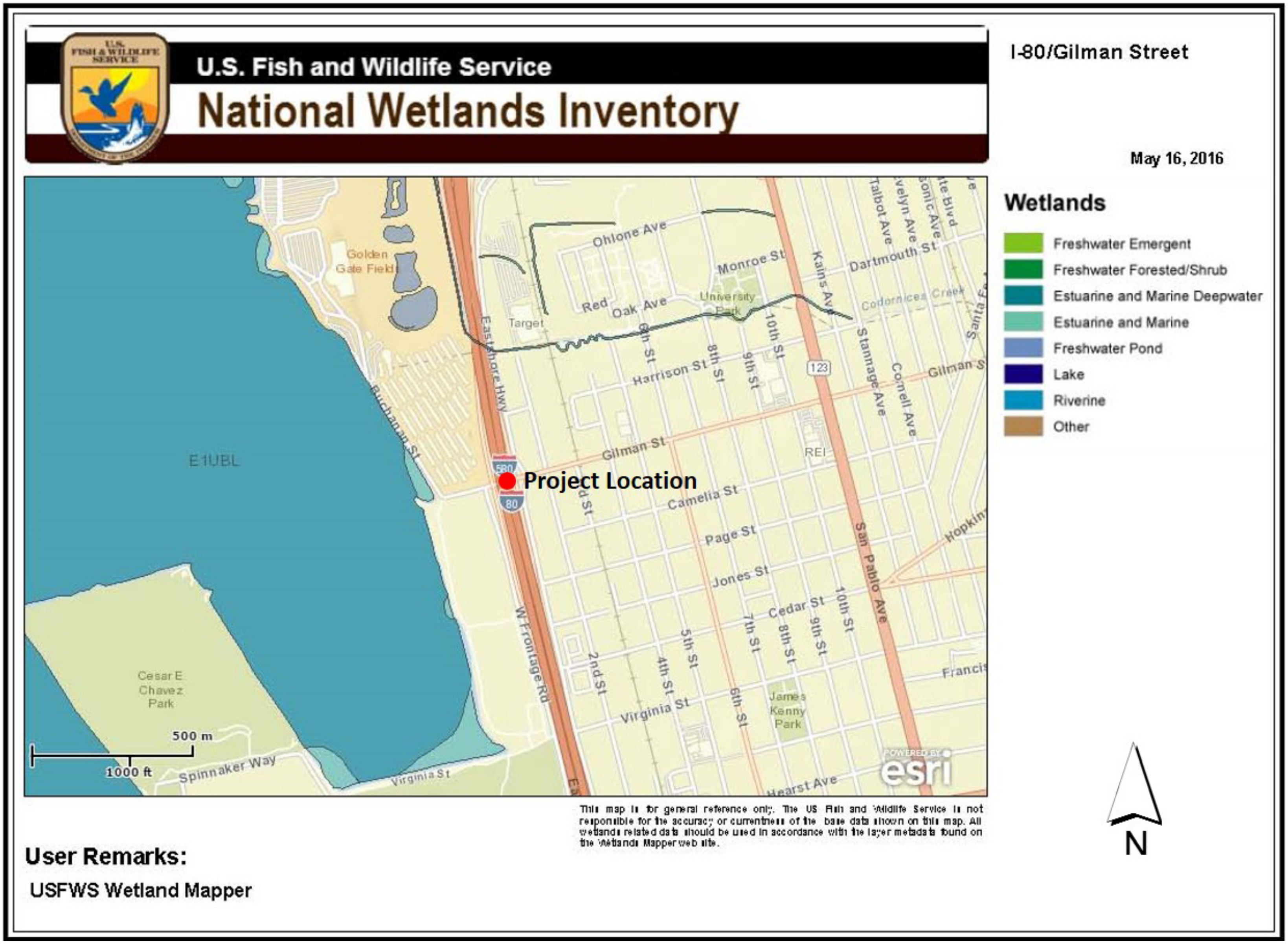

Figure 5. USFWS National Wetlands Inventory Map

3.1.1 Vegetation

Unknown plant species observed in the Study Area were identified using the *Jepson Manual* (Baldwin et al. 2012). Plants were assigned a wetland indicator status according to the *National Wetland Plant List* (Lichvar 2016) and the *Arid West 2014 Regional Wetland Plant List* (Lichvar 2014). Where differences in nomenclature occur between the two documents, the species name as it occurred in the national list is shown in brackets. Wetland indicator status is based on the expected frequency of occurrence in wetlands as shown in Table 1.

Table 1. Wetland Plant Species Indicator Status

Indicator Status	Description	Frequency Occurrence
OBL	Always found in wetlands	>99%
FACW	Usually found in wetlands	67-99%
FAC	Equal in wetlands or non-wetlands	34-66%
FACU	Usually found in non-wetlands	1-33%
UPL/NL	Upland/not listed (upland)	<1%

Source: Environmental Laboratory 1987

The presence of hydrophytic vegetation was then determined based on indicator tests described in the Arid West Region supplement.

3.1.2 Hydrology

The USACE 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 (a minimum of 14 consecutive days in the Arid West Region supplement). Evidence of wetland hydrology can include direct observations, evidence, indirect evidence, and vegetation or soil features that indicate wet conditions. Primary indicators are visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts. Secondary indicators are the Facultative (FAC)-neutral test, presence of a shallow aquitard, or drainage patterns. The presence or absence of the primary or secondary indicators described in the Arid West Region supplement was used to determine if sample points within the Study Area met the wetland hydrology criterion.

3.1.3 Soils

The USDA Natural Resources Conservation Service (NRCS) defines a hydric soil as follows:

> *"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 59:133, July 13, 1994)

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 can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, presence of redox concentrations, gleyed or depleted matrix, or high organic matter content. In addition, they are generally designated 0, 1, or 2, used to identify them as hydric according to specific indicators that can be used to determine whether a soil is hydric, for the purposes of wetland delineation. The indicators are provided in the NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA 2010). The Arid West Region supplement provides a list of 23 of these hydric soil indicators that are known to occur in the Arid West Region. Soil samples were collected and described according to the methodology provided in the Arid West Region supplement. Soil chroma and values were determined by using a standard Munsell soil color chart (Gretag Macbeth 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the 23 indicators listed in the Arid West Region supplement.

4 ENVIRONMENTAL SETTING

This section provides more information on environmental factors that influence wetland formation and continuity such as climate and precipitation, topography, soils, and hydrology.

4.1 Location and Topography

The Study Area is located in the Richmond USGS 7.5 Minute quadrangle in the City of Berkeley. The Study Area is bound by the San Francisco Bay to the west, the City of Albany to the north, and the City of Berkeley to the south and east. The Study Area is surrounded by a mix of industrial, commercial, and recreational development. The Study Area is relatively flat, sloping from east to west toward the San Francisco Bay. Along Gilman Street, elevations North American Vertical Datum of 1988 ([NAVD] 88) range from 11.7 feet west of West Frontage Road to 13.8 feet at the I-80 eastbound ramp intersection. I-80 is elevated on fill north and south of Gilman Street and crosses over Gilman Street as an elevated bridge structure with a vertical clearance of approximately 15 feet (WRECO 2016a). See Figure 6 for a topographic map.

Figure 6. Topographic Map of the Study Area

4.2 Climate and Precipitation

According to the Köeppen climate classification system, the Project area has a Mediterranean climate, characterized by hot, dry summers and mild, moist winters (George 2015). The Project area generally experiences precipitation between mid-October and mid-April. A climate summary for the nearest National Oceanic and Atmospheric Administration (NOAA) weather station with similar elevation and topography to the Project reports the following precipitation and temperature information (Western Regional Climate Center 2016):

Berkeley Station 040693

- Average annual rainfall for Berkeley is 23.41 inches
- Average temperatures range seasonally from 49.2 to 64.9 degrees Fahrenheit (ºF)

The maximum average temperature reported for the Berkeley area was 71.8ºF in September and the minimum average temperature was 42.7ºF in December. The wettest month of the year is January, with an average rainfall of 4.98 inches, and the driest month is July, with an average of 0.03 inches. Winter storms are usually of moderate duration and intensity (Western Regional Climate Center 2016).

4.3 Geology and Soils

4.3.1 Geology

Figure 7 presents geologic units as mapped in the Study Area. The geology of the Study Area consists of artificial fill (Historic) and alluvial fan and fluvial deposits (Holocene and late Pleistocene). Artificial fill (af; Historic) consists of man-made deposits of various materials and ages. Some fills are compacted and quite firm, but fills made before 1965 are typically not compacted and consist simply of dumped materials. Artificial fill overlies Holocene and/or late Pleistocene bay margin deposits. Based upon review of available data, artificial fill could be as thick as 5 to 10 feet and taper to 0 feet, depending upon the location within the Study Area (WRECO 2016b).

Alluvial fan and fluvial deposits (Qhaf; Holocene, and late Pleistocene) consist of sand and clay deposited in valley areas. Deposits are brown or tan, medium dense to dense, gravelly sand or sandy gravel that generally grades upward to sandy or silty clay. Near the distal fan edges, the fluvial deposits are typically brown, never reddish, medium dense sand that fines upward to sandy or silty clay. The best-developed Holocene alluvial fans are on the San Francisco Bay plain. All other alluvial fans and fluvial deposits are confined to narrow valley floors. The deposits are present at the eastern end of the Study Area along Gilman Street and likely underlie the artificial fill that covers most of the Study Area. Based upon review of available data, the transition from Holocene deposits to late Pleistocene deposits could be between 20 to 30 feet below ground surface (bgs) (WRECO 2016b).

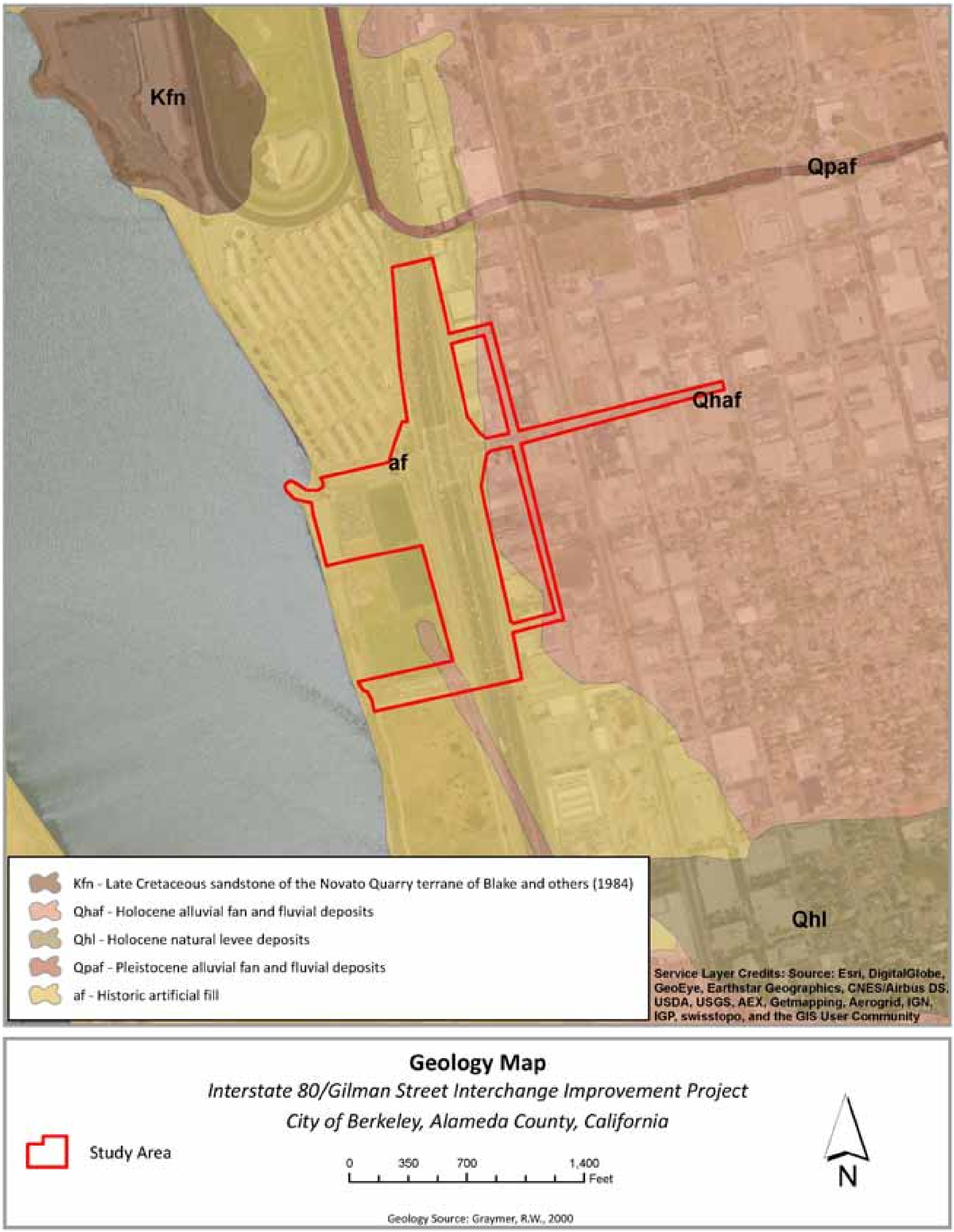

Figure 7. Geologic Map of the Study Area

4.3.2 Soils

Available logs of test borings identify the soils within the top 10 feet of the surface as very loose to loose sand and very soft organic clay (Bay Mud) with approximately 5 to 10 feet of the surface soils being fill material (WRECO 2016a).

The NRCS "Web Soil Survey" classifies the Study Area as Urban Land and Urban Land-Clear Lake complex. Urban Land is defined as land covered by buildings, roads, parking lots, and other structures. The soil within this unit is heterogeneous fill derived from various sources. Many areas designated under this map unit consist of reclaimed land adjacent to San Francisco Bay. The Urban Land soil unit has not been assigned a hydrologic soil group (USDA 1975). See Figure 8 for the soils map.

Urban Land – Clear Lake complex is about 55 percent Urban Land and 35 percent Clear Lake, with small areas of Omni silty clay loam and Marvin silt loam making up the remaining 10 percent. The soil within this unit is poorly drained and the slope ranges from 0 to 5 percent. It formed in alluvium derived from sedimentary rock (USDA 1975). This soil is in the hydrologic soil group C, defined as soils having a slow infiltration rate when thoroughly wet. These consist primarily of soils having a layer that impedes the downward movement of water or soils of moderately fine texture to fine texture.

4.3.2.1 Hydric Soils

Both soil types within the Study Area are considered hydric. The hydrologic properties for Urban Land are not defined, and hydrologic properties of Urban Land – Clear Lake complex are characterized as "poorly drained" (USDA 2014). Hydric soil is one criterion used to determine the presence or absence of wetland conditions. Table 2 summarizes site soil information.

Table 2. Soil Types Occurring within the Study Area

Map Unit Symbol	Map Unit Name (slope)	Drainage	Land Form	Hydric Soil
146	Urban Land	NA	Basin floors	Yes
148	Urban land – Clear Lake complex	poorly drained	Basin floors	Yes

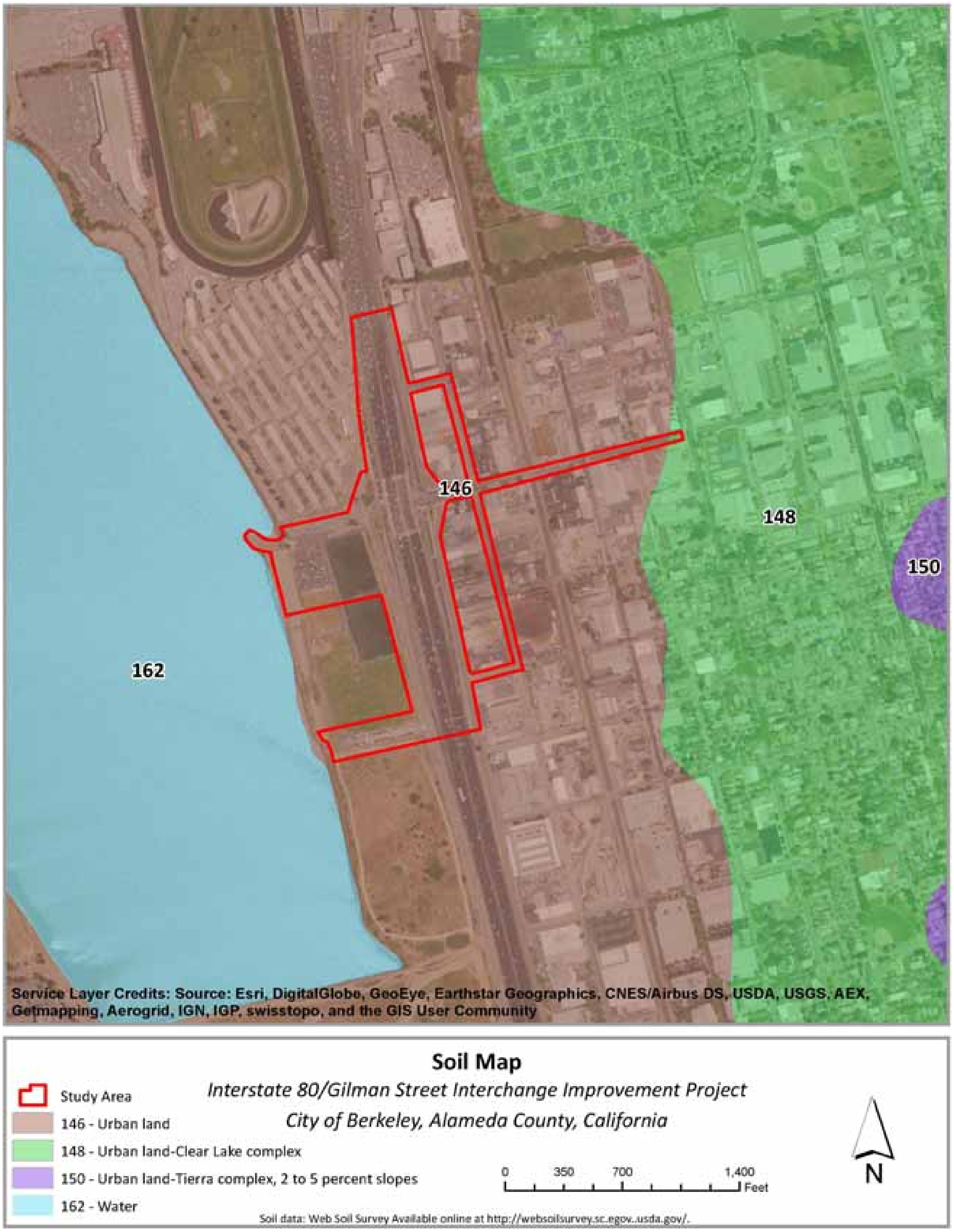

Figure 8. Soils Map of the Study Area

4.3.3 Hydrology

There are no creeks, streams, or river crossings within the limits of the Project. The Project area is within the Gilman Street and Schoolhouse Creek watersheds. The Gilman Street watershed drains the majority of the Project area, to the west of the I-80 eastbound on- and off-ramps, and all of the Project area on the north side of Gilman Street. The Schoolhouse Creek watershed drains the remaining portion, from the south side of Gilman Street between the Eastshore Highway to the UPRR tracks (WRECO 2016a).

The Gilman Street watershed consists of the various networks of drainage facilities that connect to the 60-inch reinforced concrete pipe that runs under Gilman Street and discharges to the San Francisco Bay. Based on the watershed maps, the only Project areas not within the Gilman Street watershed are the areas south of Gilman Street between Eastshore Highway and the UPRR tracks. Within this area, drainage facilities are directed to a culvert that runs under Second Street, which is a tributary of the main Schoolhouse Creek culvert under Virginia Street. See Figure 9 for local hydrology.

Figure 9. Local Hydrology Map

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5 RESULTS

USACE protocol was followed to conduct a jurisdictional delineation on May 18, 2016, by WRECO biologists Jared Elia and Scott Elder. Potential jurisdictional features found within the Study Area are described below. Wetland Determination Data Forms for the Arid West Region are found in Appendix A. Photographs of the representative portions of the Study Area are shown in Appendix B.

5.1 Hydrophytic Vegetation

Plant species that may be considered wetland indicator species were found within the Study Area. Table 3 includes a list of vegetation observed during the survey, the indicator status of the plants, and whether the plants are native or non-native.

Table 3. Vegetation Observed

Scientific Name	Common Name	Hydrophytic	Native/ Non-Native
Avena fatua	wild oat	Upland	Non-native
Brassica nigra	black mustard	Upland	Non-native
Bromus catharticus	rescue grass	Upland	Non-native
Bromus diandrus	ripgut brome	Upland	Non-native
Carduus pycnocephalus	Italian thistle	Upland	Non-native
Cyperus eragrostis	tall flatsedge	FACW	Native
Festuca perennis	Italian rye grass	Upland	Non-native
Foeniculum vulgare	sweet fennel	Upland	Non-native
Galium aparine	common bedstraw	FACU	Native
Helminthotheca echioides	bristly ox-tongue	FAC	Non-native
Hordeum sp.	barley sp.	Unknown	Unknown
Juncus sp.	rush sp.	FAC	Unknown
Malva nicaeensis	bull mallow	Upland	Non-native
Phalaris ssp.	canary grass ssp.	Unknown	Unknown
Plantago lanceolata	narrow leaved plantain	FAC	Non-native
Rumex crispus	curly dock	FAC	Non-native

Notes:
FAC Facultative; equally found in wetlands and non-wetlands
FACU Facultative Upland; usually found in non-wetlands
FACW Facultative Wetland; usually found in wetlands
Upland Occurs almost always in non-wetlands

5.2 Surveyed Features Within the Study Area

As stated in Section 4.3.3, no creeks or major drainages occur within the limits of the Study Area. Two small, earthen drainage channels and a small depression are located within the western portion of the Study Area, near the sports complex. All three features receive surface water runoff during storm events. See Figure 10 for the locations of features surveyed within the Study Area.

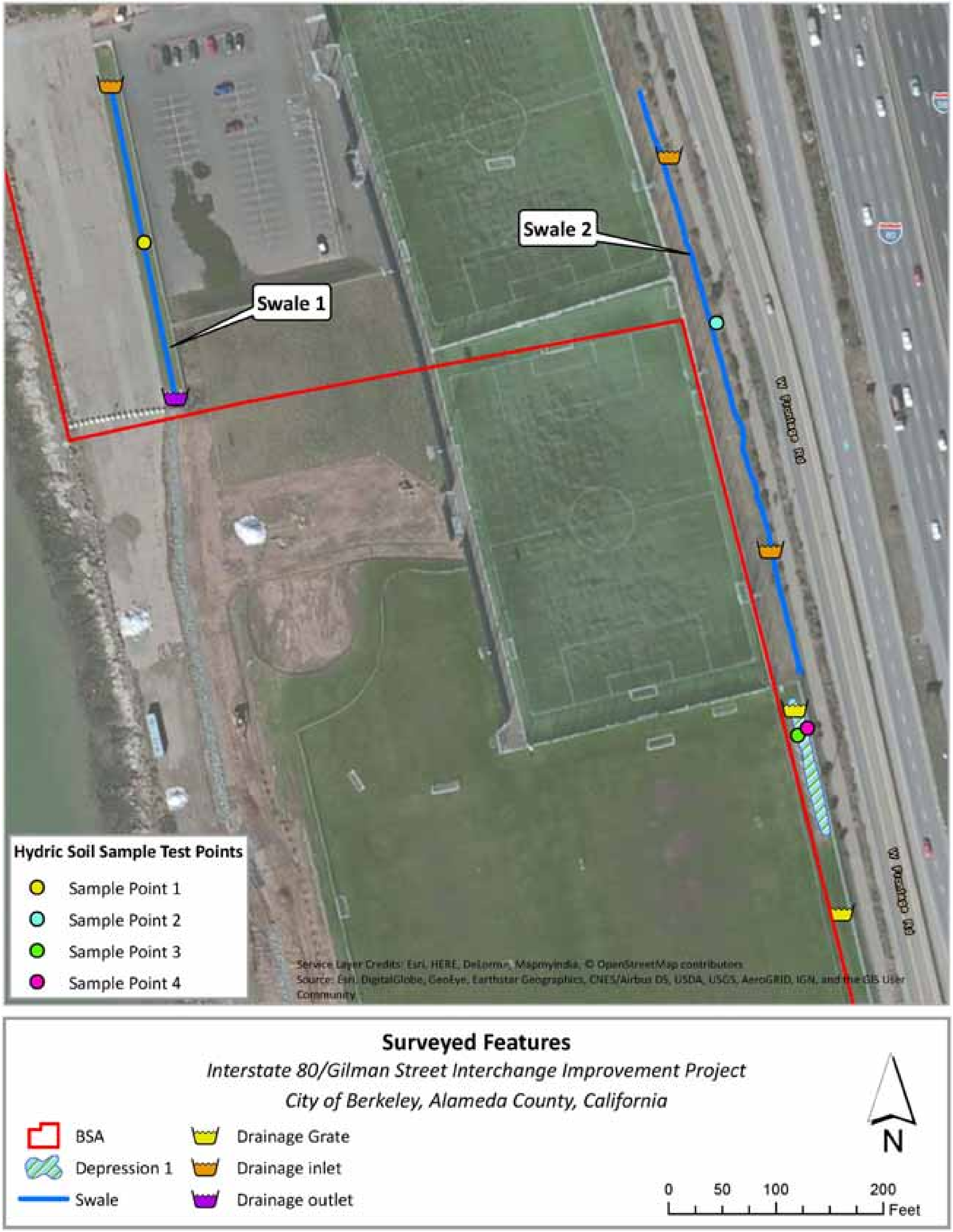

Figure 10. Surveyed Features Map

5.2.1 Swale 1

Swale 1 is an approximately 300-foot-long, earthen drainage channel, located between the sports complex parking lot and a vacant, asphalt covered lot (Photo 1). The channel receives water from a drainage outlet located at the southern edge of the channel. Water flows north through the channel, into a drainage inlet, and into the local storm drain system. Based on the City of Berkeley drain map, it appears that water from this drainage channel eventually leads to the San Francisco Bay. Based on the survey conducted on May 18, 2016, this feature does not meet the USACE criteria for waters of the U.S. (wetlands); however, the USACE will make the final determination. Additional photos are located in Appendix B.

5.2.1.1 Wetland Hydrology

Near the drainage outlet, less than 1 inch of standing water was observed during the delineation, and the rest of the channel was dry. No precipitation had occurred during the previous 72 hours. It is likely that this swale receives runoff from the sports complex and surrounding area.

5.2.1.2 Hydric Soil

A soil sample test pit was performed within the center of the channel (Sample Point 1). Soils were an unconsolidated loam, and no indicators of hydric soil were observed. No upland soil sample test pit was performed because there was no sign of hydric soils in the center of the channel.

5.2.1.3 Hydrophytic Vegetation

Hydrophytic vegetation was present. The dominant species was Italian rye grass (*Festuca perennis*) (Upland). Observed hydrophytic vegetation observed consisted of curly dock (*Rumex crispus*) (FAC). All other vegetation observed was upland.

Photo 1. Swale 1, facing north

5.2.2 Swale 2

Swale 2 is an earthen storm drain channel, approximately 560 feet long, located between the Bay Trail and the soccer fields (Photo 2). The channel receives runoff from the Bay Trail. Water within the channel flows into two different drainage inlets, located near both ends of the channel. The swale inlets are connected to the City storm drain system, which eventually outlets into San Francisco Bay. Based on the survey conducted on May 18, 2016, this feature does not meet the USACE criteria for waters of the U.S. (wetlands); however, the USACE will make the final determination. See Figure 10 for features surveyed in the Study Area. Additional photos are located in Appendix B.

5.2.2.1 Wetland Hydrology

The entire swale was dry, with no visible signs of recent ponding. An irrigation system was observed in the form of sprinklers, which would provide an additional source of hydrology.

5.2.2.2 Hydric Soils

A soil sample test pit was performed within the center of the channel (Sample Point 2). Soils within the drainage channel were unconsolidated with gravel less than 1 inch deep. No indicators of hydric soil were observed. No upland soil sample test pit was performed because there was no sign of hydric soils in the center of the channel.

5.2.2.3 Hydrophytic Vegetation

Hydrophytic vegetation was present; Italian rye grass (Upland) was the dominant species. Observed hydrophytic vegetation consisted of narrow leafed plantain (*Plantago lanceolata*) (FAC), bristly ox tongue (*Helminthotheca echioides*) (FAC), and a single tall flat sedge (*Cyperus eragrostis*) (FACW).

Photo 2. Swale 2, facing south

5.2.3 Depression 1

A small depression, approximately 130 feet long (Photo 3), is located within the property boundaries of the sports complex, adjacent to the Bay Trail and just west of Swale 2. Indicators of hydrophytic vegetation were visually observed, and a two-paired soil sample was also collected to determine the wetland and upland boundary. See Figure 10 for features surveyed in the Study Area. Additional photos are located in Appendix B.

5.2.3.1 Wetland Hydrology

This depressional feature appears to be man-made because a sprinkler irrigation system was observed. The feature also appears to receive water through runoff from the Bay Trail and soccer field. During a field meeting with the USACE, Caltrans, and Parsons on July 18, 2017, a drainage grate was observed within the depression at the northern end (Photo 4). This grate was partially covered by vegetation and was raised a few inches above ground level. Another drainage grate was observed about 70 ft south of the depression within the soccer field (Photo 5). Water entering the feature quickly drains off through the grates, therefore any hydric soils or hydrophytic vegetation is sustained by temporary applications of surface water and runoff. No ponded water has been observed at this site during the wetlands delineation field visit or during the USACE field meeting on July 18, 2017. With the drainage grate located within the depression and an observed irrigation system present, wetland hydrology is man-made, therefore, the depression does not meet the hydrology criteria.

The Tom Bates Regional Sports Complex Baseball and Softball Improvements Services During Construction report (Fugro West, Inc. 2011) describes how these drainages were designed as part of a larger drainage system for the sports complex. Along the fence line of the soccer field, where the depression is located, drain sand (approximately 12 in. to 18 in. below grade) and drainage inlets were placed to provide drainage for parts of the soccer field (Fugro West, Inc. 2011). This system of inlets drains to the San Francisco Bay. This information further strengthens the lack of hydrology since this depression was man-made and is connected to a larger drainage system. See Attachment C for the utility plan for the Tom Bates Regional Sports Complex.

5.2.3.2 Hydric Soils

Paired sample points were collected to characterize the wetland-upland boundary (Sample Points 3 and 4). Soils consisted of loam from 0 to 8 inches bgs, and sandy gravel from 8 to 10 inches bgs. Hydric soils were present at Sample Point 3 in the form of redox depressions from 2 to 10 inches bgs.

5.2.3.3 Hydrophytic Vegetation

The dominant hydrophytic plant species observed was a rush species (*Juncus* sp.) (FAC). Additional hydrophytic vegetation consisted of narrow leaf plantain (FAC) and curly dock (FAC).

Photo 3. Depression 1, facing south

Photo 4. Drainage Grate at Northern End of Depression 1, facing west

Photo 5. Drainage Grate South of Depression 1, facing north

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6 SUMMARY OF POTENTIAL JURISDICTIONAL AREAS

Based on the jurisdictional delineation conducted, there are no potential jurisdictional features within the Study Area. Depression 1 was included in the discussion as a potential wetland because it did have hydrophytic vegetation and hydric soils, however, these two indicators are maintained by frequent watering from an irrigation system and by stormwater runoff in the winter. There are no natural sources of hydrology. Therefore, the depression did not meet all three criteria to be considered a water of the U.S. (wetland). See Figure 11 and 12 for the potential non-jurisdictional feature maps. Site development activities will not impact this depression; therefore, a Section 404 Clean Water Act permit (Nationwide Permit) from the USACE or a Section 401 of the Clean Water Act and the State Porter-Cologne Act through the RWQCB is not anticipated. Swale 1 and Swale 2 did not meet the USACE criteria for waters of the U.S. (wetlands); however, the USACE will make the final determination.

The conclusions of this delineation are based on conditions observed at the time of the field surveys conducted on May 18, 2016, and during the field meeting with USACE on July 18, 2017. They are considered preliminary until verified by these agencies and/or until any permits are issued by these agencies authorizing or exempting activities within or near these areas. See Appendix B for site photos.

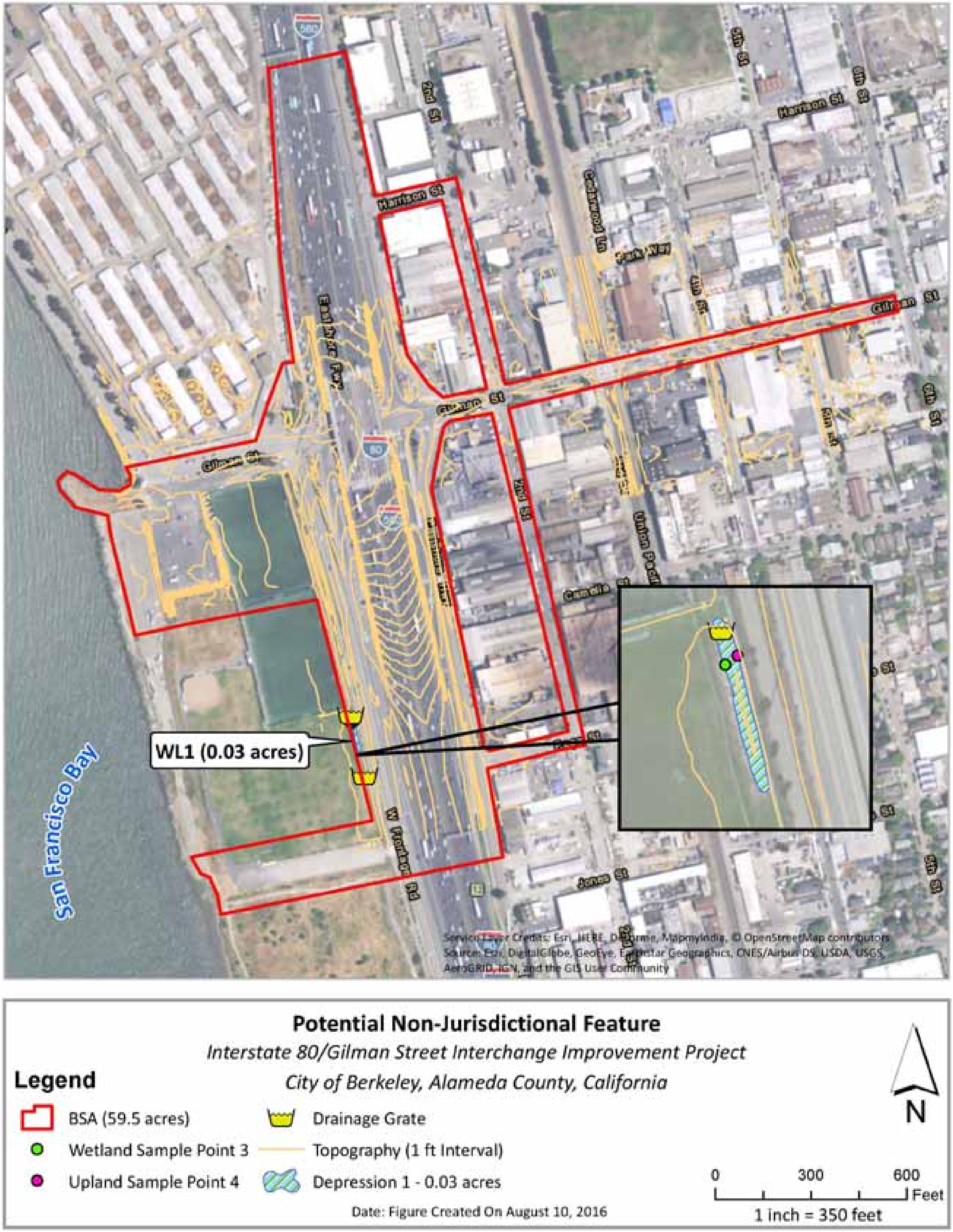

Figure 11. Potential Non-Jurisdictional Feature

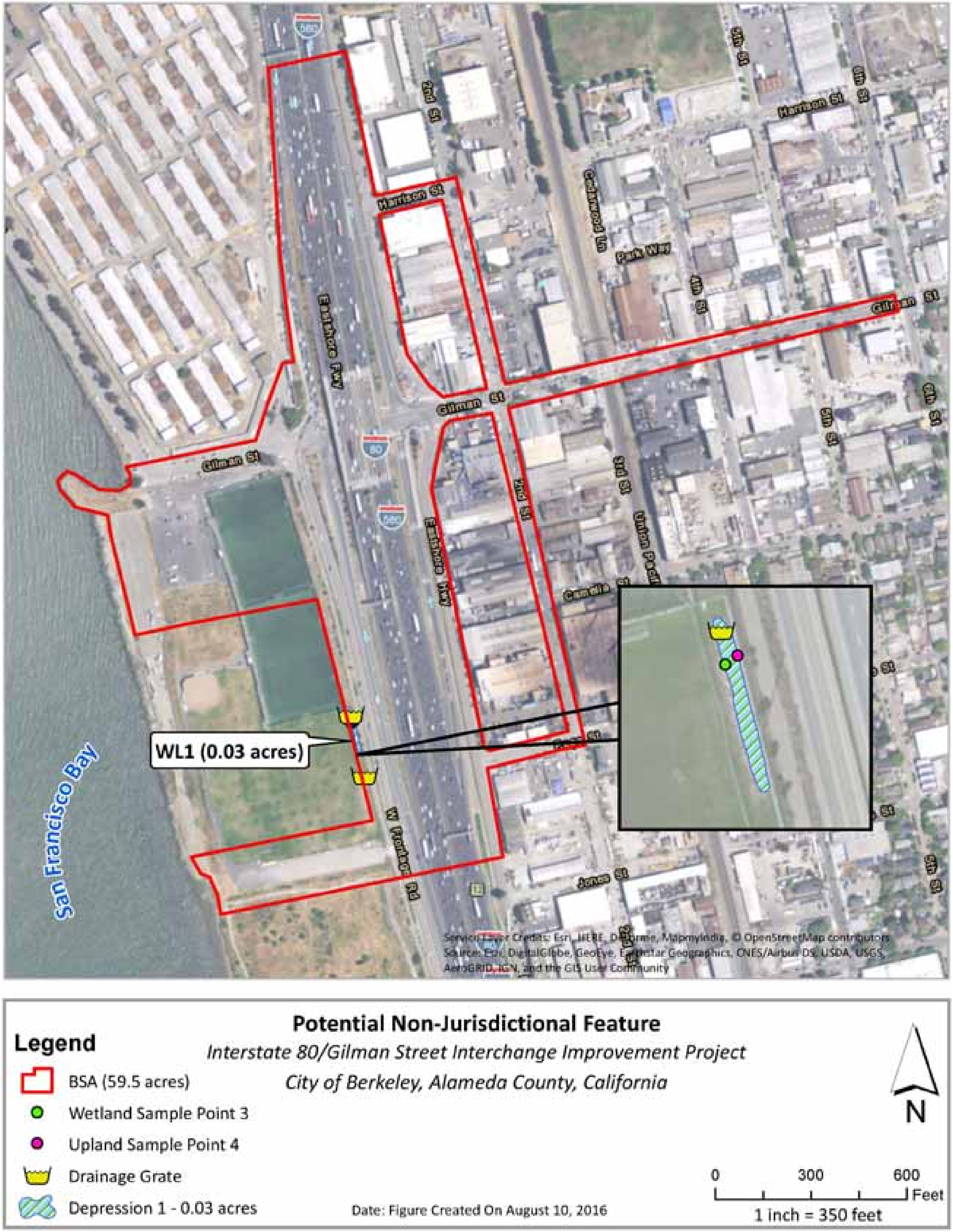

Figure 12. Potential Non-Jurisdictional Feature without Topography Lines

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Appendix A **Wetland Determination Data Forms**

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: ______ State: CA Sampling Point: 1

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Small drainage channel Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C - Mediterranean Lat: 37°52'36.72" N Long: 122°18'33.98" W Datum: NAD 83

Soil Map Unit Name: 146 - Urban land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Sample point taken in middle of channel, midway between outlet and inlet

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1 m²)			
1. Galium aparine	5		FACU
2. Carduus pycnocephalus	5		UPL
3. Festuca perennis	60	Yes	UPL
4. Malva nicaeensis	5		UPL
5. Rumex crispus	1		FAC
6. Foeniculum vulgare	1		UPL
7. Phalaris sp.	5		
8. Brassica nigra	2		UPL
Avena fatua X	5	~~= Total Cover~~	UPL
~~Woody Vine Stratum~~ (Plot size: ___)			
1. Bromus diandrus	5		UPL
2. Bromus catharticus	6		UPL
= Total Cover	100		

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	1	x 3 = 3
FACU species	1	x 4 = 4
UPL species	8	x 5 = 40
Column Totals:	10 (A)	47 (B)

Prevalence Index = B/A = 4.7

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					loam	Root zone
4-14	10YR 2/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No X

Remarks:

Soil is unconsolidated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ______

Water Table Present? Yes ______ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ______

Wetland Hydrology Present? Yes X No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small storm drain channel connected to drainage inlet, outflow to San Francisco Bay.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: ______ State: CA Sampling Point: 2

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Small drainage channel Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C-Mediterranean Lat: 37°52'36.08" N Long: 122°18'27.32" W Datum: NAD83

Soil Map Unit Name: 146 - Urban land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes X No ___		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 1 m²)			
1. Festuca perennis	50	Yes	UPL
2. Plantago lanceolata	10		FAC
3. Cyperus eragrostis	1		FACW
4. Foeniculum vulgare	1		UPL
5. Helminthotheca echioides	5		FAC
6. Hordeum sp.	10		
7. Avena fatua	5		UPL
8.			
	82 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 18 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	1	x 2 = 2
FAC species	2	x 3 = 6
FACU species	0	x 4 = 0
UPL species	3	x 5 = 15
Column Totals:	6 (A)	23 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Hardpan

Depth (inches): 3

Hydric Soil Present? Yes ______ No X

Remarks:

Fill material, unconsolidated, gravel < 1"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ____________

Water Table Present? Yes ______ No X Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ____________

Wetland Hydrology Present? Yes X No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small drainage channel adjacent to bike path, irrigation system observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: ______ State: CA Sampling Point: 3

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Small depression Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C-Mediterranean Lat: 37°52'32.3" N Long: 122°18'26.28" W Datum: NAD 83

Soil Map Unit Name: 146 - Urban Land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	
Wetland Hydrology Present?	Yes X	No ___	

Remarks:
Created wetland, irrigation system present.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Juncus sp.	80	Yes	FAC
2. Galium aparine	5		FACU
3. Rumex crispus	1		FAC
4. Plantago lanceolata	1		FAC
5. Avena fatua	13		UPL
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______ % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2							loam	Organic layer
2-8	2.5YR 5/2	90	10YR 4/6	10	C	M	loam	Roots
8-10	10YR 5/4	60	10YR 4/6	40	C	M	Sandy	Gravel < .25"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Hardpan

Depth (inches): 10

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Irrigation present, recieves water runoff from bike path and soccer field

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: ________ State: CA Sampling Point: 4

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Small slope Local relief (concave, convex, none): concave Slope (%): 10

Subregion (LRR): C - Mediterranean Lat: 37°52'32.35"N Long: 122°18'26.20" W Datum: NAD 83

Soil Map Unit Name: 146 - Urban land NWI classification: ________

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X		

Remarks:
Small slope adjacent to wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 1 m²)			
1. Festuca perennis	80	Yes	UPL
2. Plantago lanceolata	10		FAC
3. Galium aparine	4		FACU
4. Avena fatua	5		UPL
5. Helminthotheca echioides	1		FAC
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	2	x 3 = 6
FACU species	1	x 4 = 4
UPL species	2	x 5 = 10
Column Totals:	5 (A)	20 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Sandy	Root zone
2-12	10YR 2/2	100					Sandy	Gravel < .25"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

On small slope adjacent to wetland.

Appendix B Soil Test Pit Location Photos

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Photo 1. Swale 1, test pit 1 location.

Photo 2. Swale 1, test pit 1 soil.

Photo 3. Swale 2, test pit 2 location.

Photo 4. Swale 2, test pit 2 soil.

Photo 5. Depressional feature, test pit 3 location.

Photo 6. Depressional feature, test pit 3 soil.

Photo 7. Depressional feature, test pit 4 location.

Photo 8. Depressional feature, test pit 4 soil.

Appendix C **Utility Plan**

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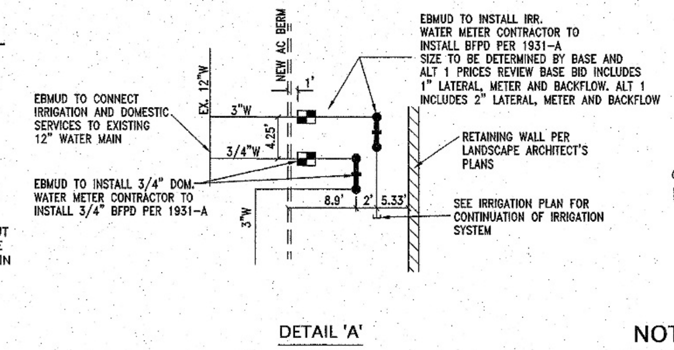
LEGEND (FOR THIS SHEET ONLY)

PROPOSED	EXISTING	
		ASPHALT BERM
		BUILDING LINE
		CENTER LINE
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		ELECTRIC LINE
		FENCE LINE
		FIRE SERVICE & VALVE
		FIBER OPTICS LINE
		GAS LINE–VALVE & METER
		GUARD RAIL
		LOT LINE
		MONUMENT/MONUMENT LINE
		OVERHEAD POWER LINE
		OVERHEAD POWER LINE
		PROPERTY LINE
		SANITARY SEWER–MANHOLE & CLEANOUT
		SIDEWALK
		SPOT ELEVATION
		STORM DRAIN–MANHOLE & CATCH BASIN
		TELEPHONE LINE
		WATER LINE & VALVE

PROPOSED	EXISTING	
		BACKFLOW PREVENTION DEVICE
		ELECTROLIER
		FIRE HYDRANT
		POST INDICATOR VALVE
		POWER POLE/JOINT POLE
		TRANSFORMER
		TRAFFIC SIGN
		UTILITY BOX
ARV	ARV	AIR RELEASE VALVE
AVP	AVP	AIR VALVE POST
BFPD	BFPD	BACKFLOW PREVENTION DEVICE
BOV	BOV	BLOWOFF VALVE
CATVB	CATVB	CABLE TELEVISION BOX
CCB	CCB	CALTRANS BOX
CB	CB	CATCH BASIN
COTG	COTG	CLEANOUT TO GRADE
HDWL	HDWL	CONCRETE HEADWALL
DS	DS	DOWN SPOUT
EB	EB	ELECTRIC BOX
ETS	ETS	ELECTROLYSIS TEST STATION
EXP	EXP	EXHAUST PIPE
FH	FH	FIRE HYDRANT
FL	FL	FLOW LINE
GM	GM	GAS MARKER

PROPOSED	EXISTING	
GV	GV	GAS VALVE
GA	GA	GUY ANCHOR
IE	IE	INVERT ELEVATION
IB	IB	IRRIGATION BOX
JP	JP	JOINT POWER POLE
PBMH	PBMH	PAC BELL MANHOLE
PIV	PIV	POST INDICATOR VALVE
PP	PP	POWER POLE
RWL	RWL	RAIN WATER LEADER
RVP	RVP	RELEASE VALVE POST
RE	RE	RIM ELEVATION
SSCO	SSCO	SANITARY SEWER CLEANOUT
SSMH	SSMH	SANITARY SEWER MANHOLE
SOCB	SOCB	SIDE OPENING CATCH BASIN
SMH	SMH	SPRINT MANHOLE
SM	SM	SPRINT MARKER
SSMH	SSMH	STORM DRAIN MANHOLE
SL	SL	STREET LIGHT
SLB	SLB	STREET LIGHT BOX
TB	TB	TELEPHONE BOX
TMH	TMH	TELEPHONE MANHOLE
TSB	TSB	TRAFFIC SIGNAL BOX
TSP	TSP	TRAFFIC SIGNAL POLE
WB	WB	WATER BOX
WM	WM	WATER METER
WV	WV	WATER VALVE



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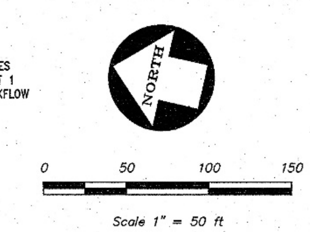

NOTES:

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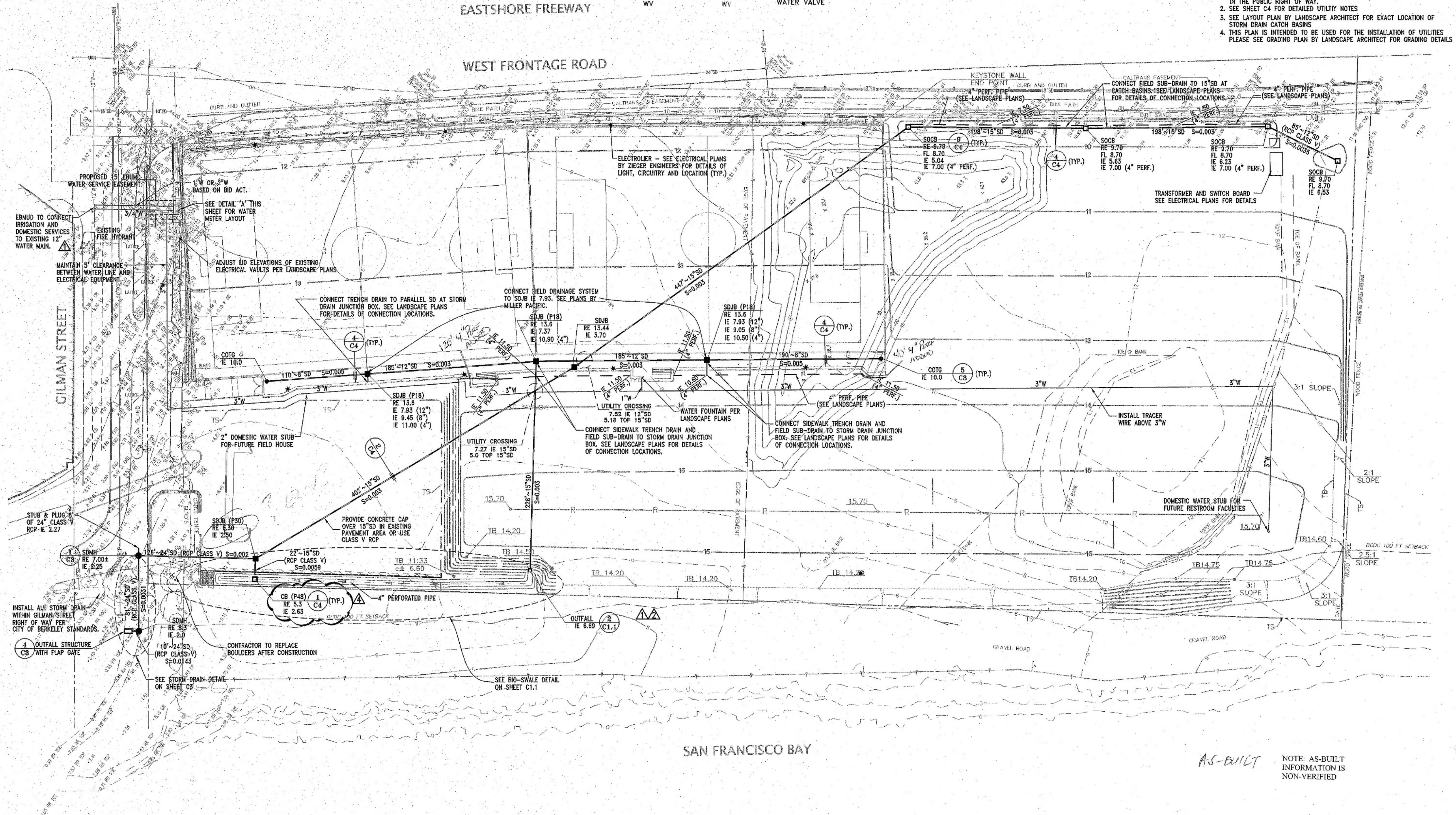
2. SEE SHEET C4 FOR DETAILED UTILITY NOTES
3. SEE LAYOUT PLAN BY LANDSCAPE ARCHITECT FOR EXACT LOCATION OF STORM DRAIN CATCH BASINS
4. THIS PLAN IS INTENDED TO BE USED FOR THE INSTALLATION OF UTILITIES PLEASE SEE GRADING PLAN BY LANDSCAPE ARCHITECT FOR GRADING DETAILS



NOTE: AS-BUILT INFORMATION IS NON-VERIFIED

SFE
urban design
landscape
architecture

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San Ramon, California 94583
Telephone: 925.552.4900
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KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
1233 Quarry Lane, Suite 145
Pleasanton, California 94566
(925) 249-6555
Fax (925) 249-6563

UTILITY PLAN

REVISIONS

SYMBOL	DATE	DESCRIPTION	APPROVED
1	10/23/06	CITY COMMENT	
2	12/20/06	CITY COMMENT	
3	10/15/07	REGIONAL BOARD COMMENT	

DESIGNED BY	DRAWN BY	SCALE
JAM	JAM	1" = 50'
	CHECKED BY	DATE
	JAM	12/20/2006

GILMAN STREET SPORTS FIELDS
W. FRONTAGE ROAD AND GILMAN STREET

PLANS PREPARED FOR:
CITY OF BERKELEY
SFE PROJECT NUMBER:

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LEGEND (FOR THIS SHEET ONLY)

EXISTING

- ASPHALT BERM
- BUILDING LINE
- CENTER LINE
- CONCRETE CURB
- CONCRETE CURB & GUTTER
- CONTOUR LINE
- DRIVEWAY
- EDGE OF PAVEMENT
- ELECTRIC LINE
- FENCE LINE
- FIRE SERVICE & VALVE
- FIBER OPTICS LINE
- GAS LINE–VALVE & METER
- GUARD RAIL
- LOT LINE
- MONUMENT/MONUMENT LINE
- OVERHEAD POWER LINE
- OVERHEAD POWER LINE
- PROPERTY LINE
- SANITARY SEWER–MANHOLE & CLEANOUT
- SIDEWALK
- SPOT ELEVATION
- STORM DRAIN–MANHOLE & CATCH BASIN
- TELEPHONE LINE
- WATER LINE & VALVE

- BACKFLOW PREVENTION DEVICE
- ELECTROLIER
- FIRE HYDRANT
- POST INDICATOR VALVE
- POWER POLE/JOINT POLE
- TRANSFORMER
- TRAFFIC SIGN
- UTILITY BOX

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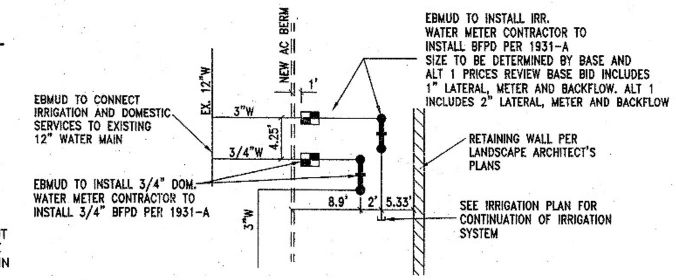

DETAIL 'A'
N.T.S.

NORTH

0 50 100 150
Scale 1" = 50 ft

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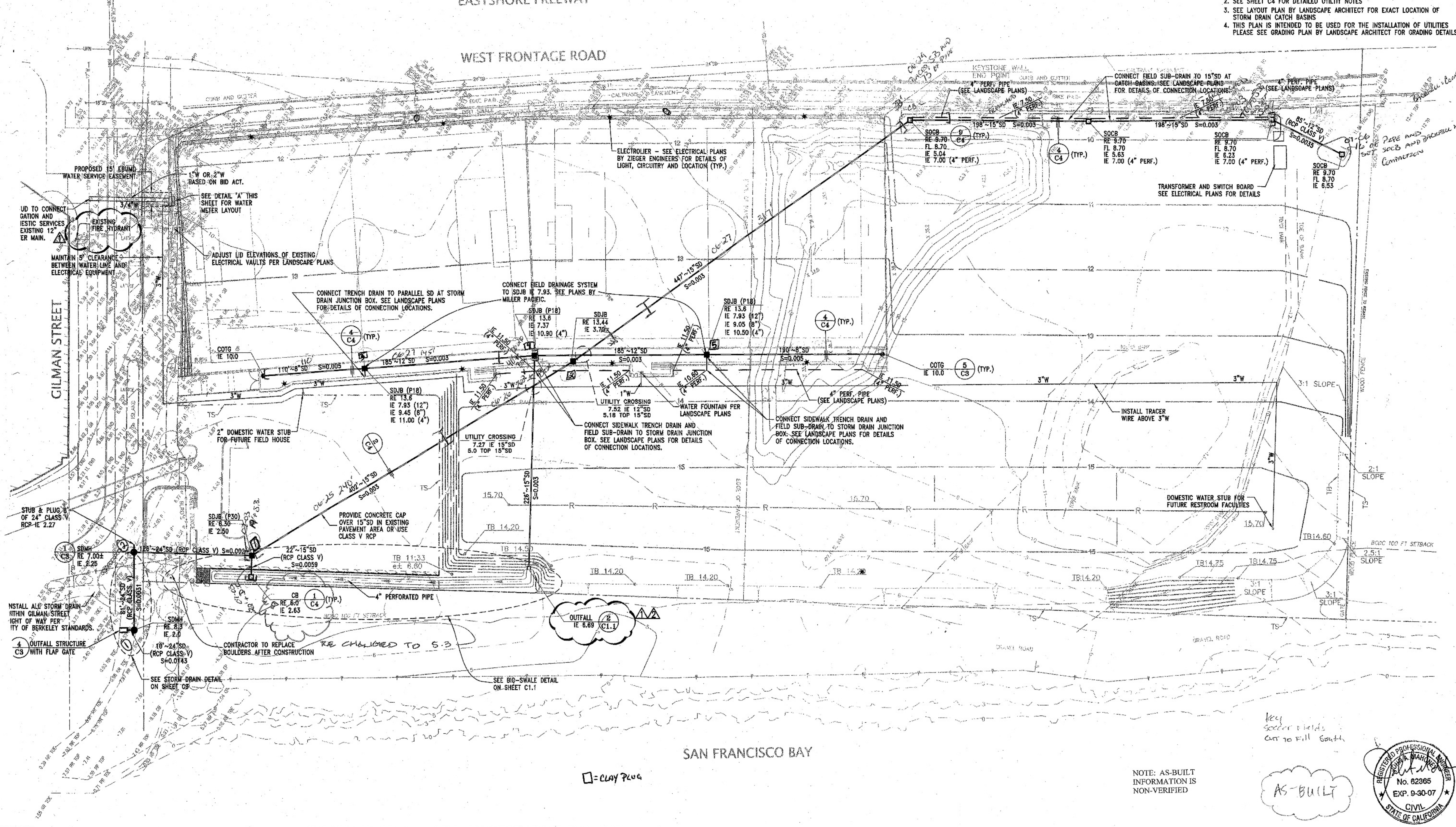

NOTE: AS-BUILT INFORMATION IS NON-VERIFIED

AS-BUILT

Key soccer fields cut to fill South

REGISTERED PROFESSIONAL ENGINEER No. 62365 EXP. 9-30-07 CIVIL STATE OF CALIFORNIA

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SFE urban design landscape architecture

5 Crow Canyon Court, Suite San Ramon, California Telephone: 925.552.4900 Facsimile: 925.552.4903

KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC.
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UTILITY PLAN

REVISIONS

SYMBOL	DATE	DESCRIPTION	APPROVED
		CITY COMMENT	
		CITY COMMENT	

DESIGNED BY JAM | DRAWN BY JAM | SCALE 1" = 50'

GILMAN STREET SPORTS FIELDS

W. FRONTAGE ROAD AND GILMAN STREET

PLANS PREPARED FOR: CITY OF BERKELEY

SHEET C1 OF 47 SHEETS

WRECO
1243 Alpine Road, Suite 108
Walnut Creek, CA 94596
Phone: 925.941.0017
Fax: 925.941.0018
www.wreco.com

Technical Memorandum

Date: December 15, 2017

To: Carie Montero, Parsons

From: Jared Elia, WRECO

Subject: I-80 Gilman Interchange Project
Addendum to the Wetland Delineation Report

Introduction

This memorandum is in response to the United States Army Corps of Engineers (USACE) email to Caltrans on December 11, 2017 indicating Swale #2 (located within the Tom Bates Sports Complex) identified in the I-80 Gilman Interchange Improvement Projects' Wetland Delineation Report was determined to be jurisdictional. This determination was based, in part, on the USACE correcting the indicator status identification of *Festuca perennis* from upland to FAC. In addition, the USACE determined that the soil type identified on the field delineation sheet as "fill" was considered problematic and concluded that wetland hydrology is present.

The project team conducted additional research on December 14, 2017 in order to clarify the origination, construction history of Swale #2, and its potential to exhibit hydric soils. The team reviewed as-builts provided by the City of Berkeley of the Gilman Street Sports Complex (now known as the Tom Bates Sports Complex), and historical aerial photographs (Google Earth). WRECO also performed a wetland determination of the swale by digging four (4) additional soil sample test pits on December 14, 2017 (the results of which are documented in the field data sheet attached). The following information is a summary of the results of this additional research.

Historical Setting

The Tom Bates Sports Complex was constructed in 2006-2007. The as-builts clearly show the swale as a graded component of the construction for the sports complex (Attachment 1). Historical aerial imagery shows that in 2007 during the construction of the sports complex, this swale did not exist, but can later been seen in 2009 aerial imagery after construction. These photos are shown in Attachment 2.

Historical aerial photographs also indicate that this man-made swale is routinely mowed and maintained, with planted landscape vegetation occurring along the bicycle trail (San Francisco Bay Trail). The mowing and regular maintenance was also observed from field visits made by WRECO between 2016 and 2017 (as shown in Attachment 2). The two drainage inlets that occur along the southern end of the swale indicate the swale was created to convey water from the bicycle trail, as well as runoff from the adjacent soccer fields. An above ground irrigation system (sprinklers) is also located along the banks of the swale, and travels the entire length. The drainage inlet and sprinkler system are shown in Attachment 2.

Methods

A field determination was conducted on December 14, 2017 to further investigate the swale, since only one sample test pit was previously dug on May 18, 2016. The December field visit included digging four soil sample test pits within the project area. Two sample pits were dug within the center of the swale and two in upland areas (the sample pits were dug in pairs relatively adjacent to each other in swale and upland areas). The wetland delineation forms for the December 14, 2017 field investigation are shown in Attachment 3.

Results

During the field investigation, facultative vegetation was observed; however, none of the test locations met the dominance test or prevalence index test required to indicate hydrophytic vegetation was present. Redox was observed at Sample Pit 1; however, the soil matrix did not meet any criteria for soil chroma or value to be considered hydric based on the NRCS *Field Indicators of Hydric Soils in the United States* (Version 7.0, 2010). No other soil sample pits showed signs of redox or hydric soils. No primary or secondary indicators of hydrology were observed in accordance to the wetland determination forms. During the May 18, 2016 field delineation, hydrology was marked on the data form; however, the only hydrologic indicator observed was the irrigation system as noted in the comment section of the data form.

Conclusion

Based on the December 14, 2017 field investigations, the project team is requesting a review of the most recent information available showing the following:

1. Swale #2 was created during the construction of the sports complex to convey water. It is our determination that this swale was created artificial hydrology in the form of an irrigation system that maintains facultative vegetation, and does not meet the USACE three parameters of hydrophytic vegetation, hydric soils and hydrology (shown on the May 2016 and December 2017 delineation forms).
2. The swale also does not meet the USACE definition for "waters of the United States" defined in 33 CFR Part 328.3(a) and 40 CFP Part 230.3(s).
3. In addition, following the Rapanos v. United States and Carabell v. Army Corps of Engineers, the USACE and the EPA issued a joint memorandum on June 5, 2007 that included new guidelines for establishing whether wetlands and other waters of the U.S. fall within the USACE jurisdiction. In that memorandum it states that the agencies generally do not assert jurisdiction over swales, erosional features, or ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

According to these findings stated above, the project team would like the USACE to reevaluate their determination for Swale #2.

ATTACHMENTS

- Attachment 1: As-built Plans
- Attachment 2: Photos Documentation
- Attachment 3: December 14, 2017 Wetland Delineation Forms

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Fax: 925.941.0018
www.wreco.com

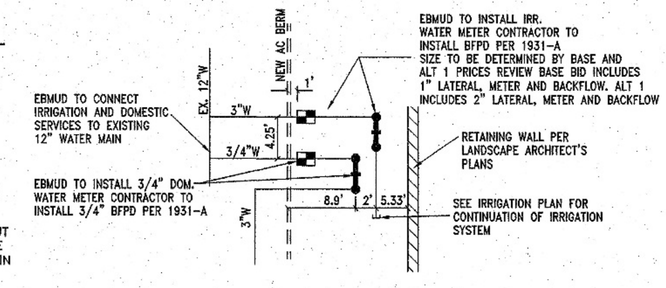
Attachment 1: As-Built Plans

LEGEND (FOR THIS SHEET ONLY)

PROPOSED	EXISTING	
		ASPHALT BERM
		BUILDING LINE
		CENTER LINE
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
E	E	ELECTRIC LINE
		FENCE LINE
FS	FS	FIRE SERVICE & VALVE
FO	FO	FIBER OPTICS LINE
G	G	GAS LINE–VALVE & METER
		GUARD RAIL
		LOT LINE
		MONUMENT/MONUMENT LINE
OH	OH	OVERHEAD POWER LINE
J	J	OVERHEAD POWER LINE
		PROPERTY LINE
SS	SS	SANITARY SEWER–MANHOLE & CLEANOUT
		SIDEWALK
100.00	100.00	SPOT ELEVATION
SD	SD	STORM DRAIN–MANHOLE & CATCH BASIN
T	T	TELEPHONE LINE
W	W	WATER LINE & VALVE

PROPOSED	EXISTING	
		BACKFLOW PREVENTION DEVICE
		ELECTROLIER
		FIRE HYDRANT
		POST INDICATOR VALVE
		POWER POLE/JOINT POLE
T		TRANSFORMER
		TRAFFIC SIGN
		UTILITY BOX
ARV	ARV	AIR RELEASE VALVE
AVP	AVP	AIR VALVE POST
BFPD	BFPD	BACKFLOW PREVENTION DEVICE
BOV	BOV	BLOWOFF VALVE
CATVB	CATVB	CABLE TELEVISION BOX
CCB	CCB	CALTRANS BOX
CB	CB	CATCH BASIN
COTG	COTG	CLEANOUT TO GRADE
HDWL	HDWL	CONCRETE HEADWALL
DS	DS	DOWN SPOUT
EB	EB	ELECTRIC BOX
ETS	ETS	ELECTROLYSIS TEST STATION
EXP	EXP	EXHAUST PIPE
FH	FH	FIRE HYDRANT
FL	FL	FLOW LINE
GM	GM	GAS MARKER

PROPOSED	EXISTING	
GV	GV	GAS VALVE
GA	GA	GUY ANCHOR
IE	IE	INVERT ELEVATION
IB	IB	IRRIGATION BOX
JP	JP	JOINT POWER POLE
PBMH	PBMH	PAC BELL MANHOLE
PIV	PIV	POST INDICATOR VALVE
PP	PP	POWER POLE
RWL	RWL	RAIN WATER LEADER
RVP	RVP	RELEASE VALVE POST
RE	RE	RIM ELEVATION
SSCO	SSCO	SANITARY SEWER CLEANOUT
SSMH	SSMH	SANITARY SEWER MANHOLE
SOCB	SOCB	SIDE OPENING CATCH BASIN
SMH	SMH	SPRINT MANHOLE
SM	SM	SPRINT MARKER
SSMH	SSMH	STORM DRAIN MANHOLE
SL	SL	STREET LIGHT
SLB	SLB	STREET LIGHT BOX
TB	TB	TELEPHONE BOX
TMH	TMH	TELEPHONE MANHOLE
TSB	TSB	TRAFFIC SIGNAL BOX
TSP	TSP	TRAFFIC SIGNAL POLE
WB	WB	WATER BOX
WM	WM	WATER METER
WV	WV	WATER VALVE



DETAIL 'A'
N.T.S.

Scale 1" = 50 ft

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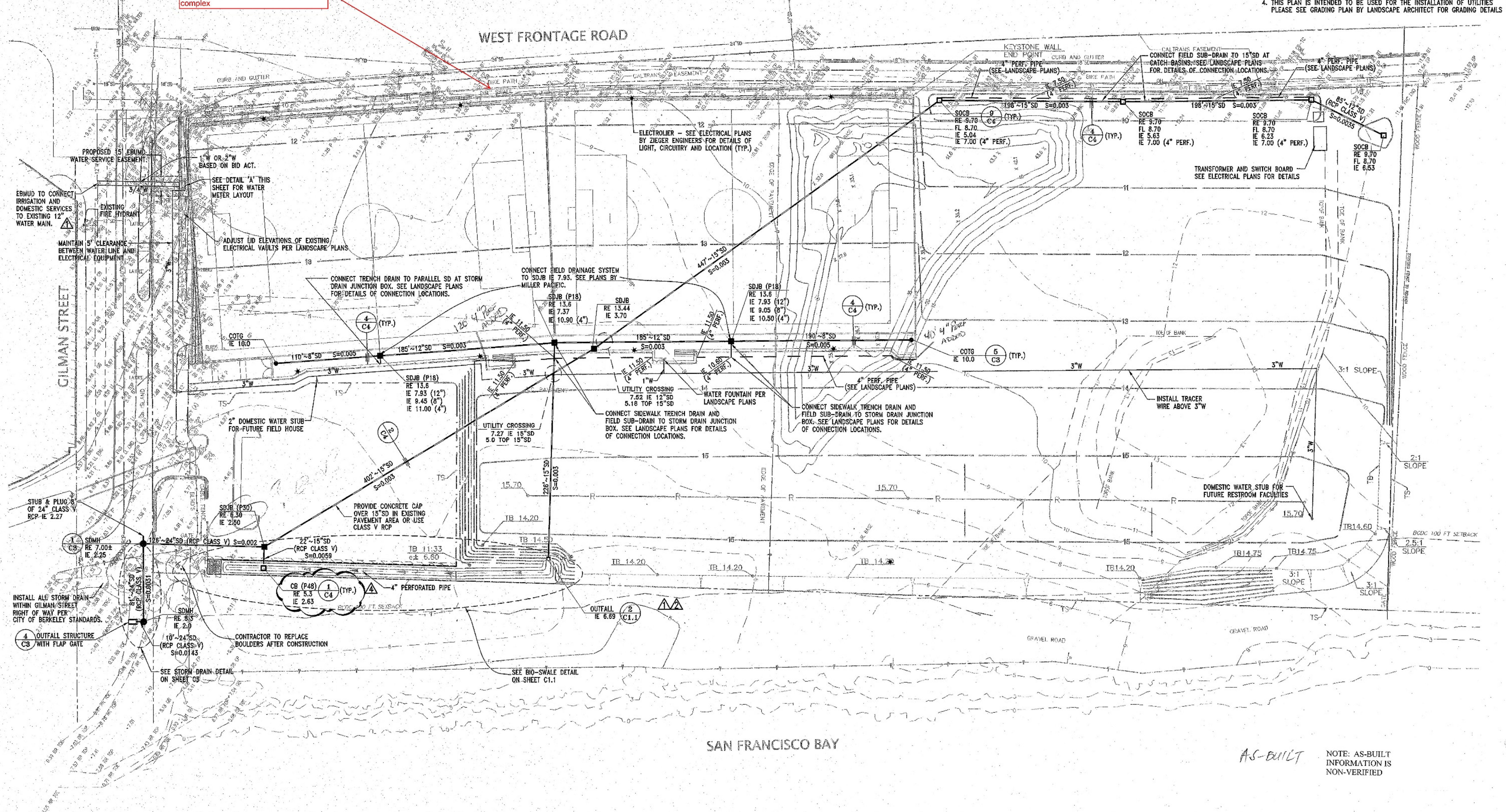
4. THIS PLAN IS INTENDED TO BE USED FOR THE INSTALLATION OF UTILITIES PLEASE SEE GRADING PLAN BY LANDSCAPE ARCHITECT FOR GRADING DETAILS

as builts clearly show the area where Swale 2 was identified was graded as part of construction for the sports complex



NOTE: AS-BUILT INFORMATION IS NON-VERIFIED

SFE urban design landscape architecture

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(925) 249–6555
Fax (925) 249–6563

UTILITY PLAN

REVISIONS

DESIGNED BY JAM | DRAWN BY JAM | CHECKED BY JAM | SCALE 1" = 50' | DATE 12/20/2006

GILMAN STREET SPORTS FIELDS
W. FRONTAGE ROAD AND GILMAN STREET

PLANS PREPARED FOR: CITY OF BERKELEY

SHEET C1 OF 47 SHEETS

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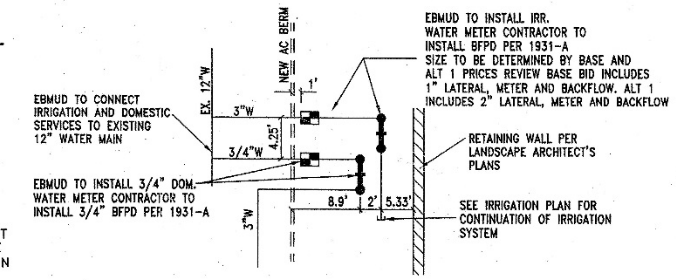
LEGEND (FOR THIS SHEET ONLY)

PROPOSED	EXISTING	DESCRIPTION
		ASPHALT BERM
		BUILDING LINE
		CENTER LINE
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		ELECTRIC LINE
		FENCE LINE
		FIRE SERVICE & VALVE
		FIBER OPTICS LINE
		GAS LINE–VALVE & METER
		GUARD RAIL
		LOT LINE
		MONUMENT/MONUMENT LINE
		OVERHEAD POWER LINE
		OVERHEAD POWER LINE
		PROPERTY LINE
		SANITARY SEWER–MANHOLE & CLEANOUT
		SIDEWALK
		SPOT ELEVATION
		STORM DRAIN–MANHOLE & CATCH BASIN
		TELEPHONE LINE
		WATER LINE & VALVE
		BACKFLOW PREVENTION DEVICE
		ELECTROLIER
		FIRE HYDRANT
		POST INDICATOR VALVE
		POWER POLE/JOINT POLE
		TRANSFORMER
		TRAFFIC SIGN
		UTILITY BOX
ARV	ARV	AIR RELEASE VALVE
AVP	AVP	AIR VALVE POST
BFPD	BFPD	BACKFLOW PREVENTION DEVICE
BOV	BOV	BLOWOFF VALVE
CATVB	CATVB	CABLE TELEVISION BOX
CCB	CCB	CALTRANS BOX
CB	CB	CATCH BASIN
COTG	COTG	CLEANOUT TO GRADE
HDWL	HDWL	CONCRETE HEADWALL
DS	DS	DOWN SPOUT
EB	EB	ELECTRIC BOX
ETS	ETS	ELECTROLYSIS TEST STATION
EXP	EXP	EXHAUST PIPE
FH	FH	FIRE HYDRANT
FL	FL	FLOW LINE
GM	GM	GAS MARKER
GV	GV	GAS VALVE
GA	GA	GUY ANCHOR
IE	IE	INVERT ELEVATION
IB	IB	IRRIGATION BOX
JP	JP	JOINT POWER POLE
PBMH	PBMH	PAC BELL MANHOLE
PIV	PIV	POST INDICATOR VALVE
PP	PP	POWER POLE
RWL	RWL	RAIN WATER LEADER
RVP	RVP	RELEASE VALVE POST
RE	RE	RIM ELEVATION
SSCO	SSCO	SANITARY SEWER CLEANOUT
SSMH	SSMH	SANITARY SEWER MANHOLE
SOCB	SOCB	SIDE OPENING CATCH BASIN
SMH	SMH	SPRINT MANHOLE
SM	SM	SPRINT MARKER
SSMH	SSMH	STORM DRAIN MANHOLE
SL	SL	STREET LIGHT
SLB	SLB	STREET LIGHT BOX
TB	TB	TELEPHONE BOX
TMH	TMH	TELEPHONE MANHOLE
TSB	TSB	TRAFFIC SIGNAL BOX
TSP	TSP	TRAFFIC SIGNAL POLE
WB	WB	WATER BOX
WM	WM	WATER METER
WV	WV	WATER VALVE



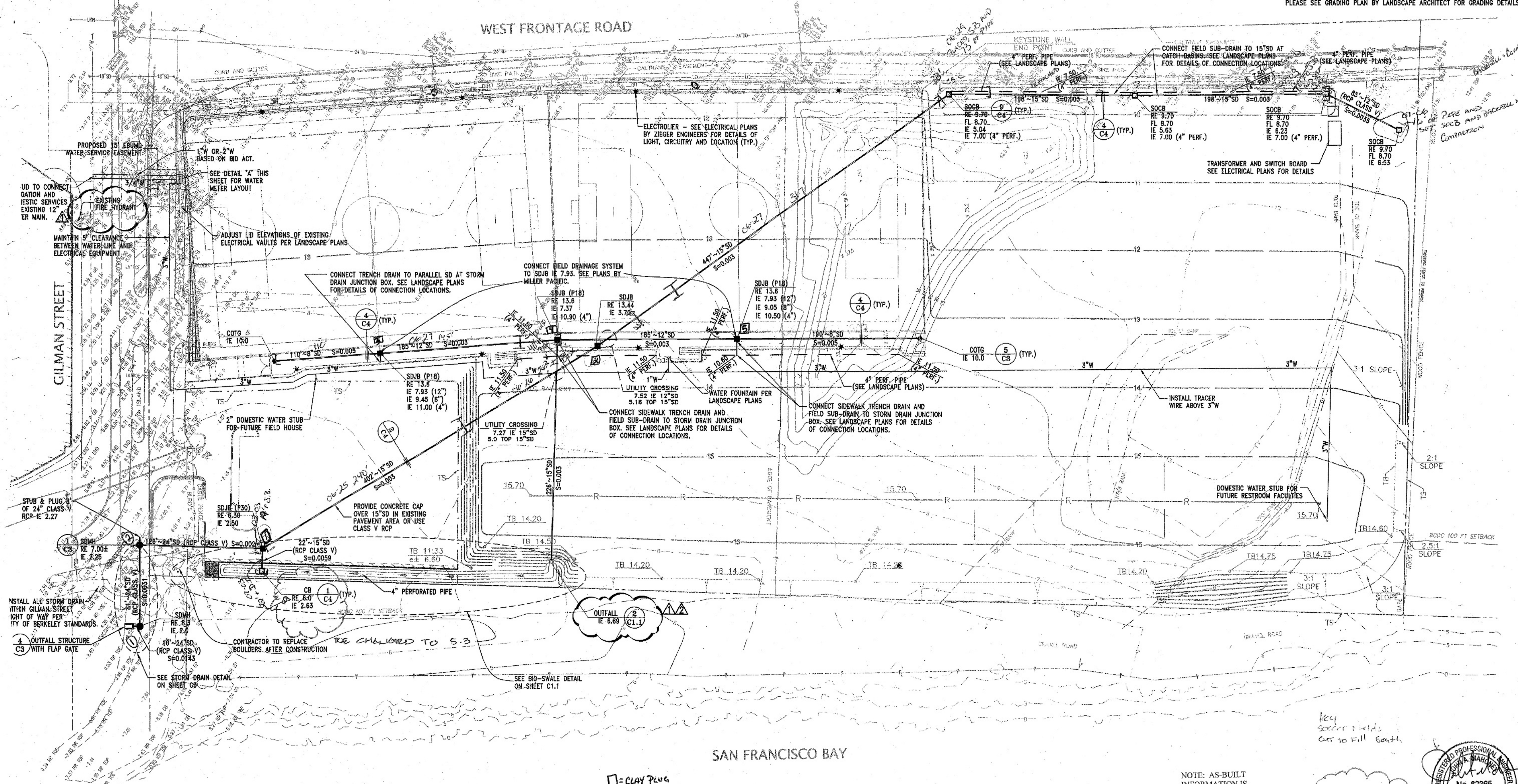
DETAIL 'A'
N.T.S.

NORTH

0 50 100 150
Scale 1" = 50 ft

NOTES:

1. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL CONFORM TO THE CITY OF BERKELEY STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL OBTAIN ALL ENGINEERING PERMITS FROM THE PERMIT SERVICE CENTER FOR ALL WORK IN THE PUBLIC RIGHT OF WAY.
2. SEE SHEET C4 FOR DETAILED UTILITY NOTES
3. SEE LAYOUT PLAN BY LANDSCAPE ARCHITECT FOR EXACT LOCATION OF STORM DRAIN CATCH BASINS
4. THIS PLAN IS INTENDED TO BE USED FOR THE INSTALLATION OF UTILITIES PLEASE SEE GRADING PLAN BY LANDSCAPE ARCHITECT FOR GRADING DETAILS



□=CLAY PLUG

Key soccer fields cut to fill South

NOTE: AS-BUILT INFORMATION IS NON-VERIFIED

AS-BUILT

REGISTERED PROFESSIONAL ENGINEER No. 62365 EXP. 9-30-07 CIVIL STATE OF CALIFORNIA

urban design landscape architecture

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UTILITY PLAN

REVISIONS

SCALE 1" = 50'

DESIGNED BY JAM | DRAWN BY JAM

GILMAN STREET SPORTS FIELDS
W. FRONTAGE ROAD AND GILMAN STREET
PLANS PREPARED FOR: CITY OF BERKELEY

SHEET C1 OF 47 SHEETS

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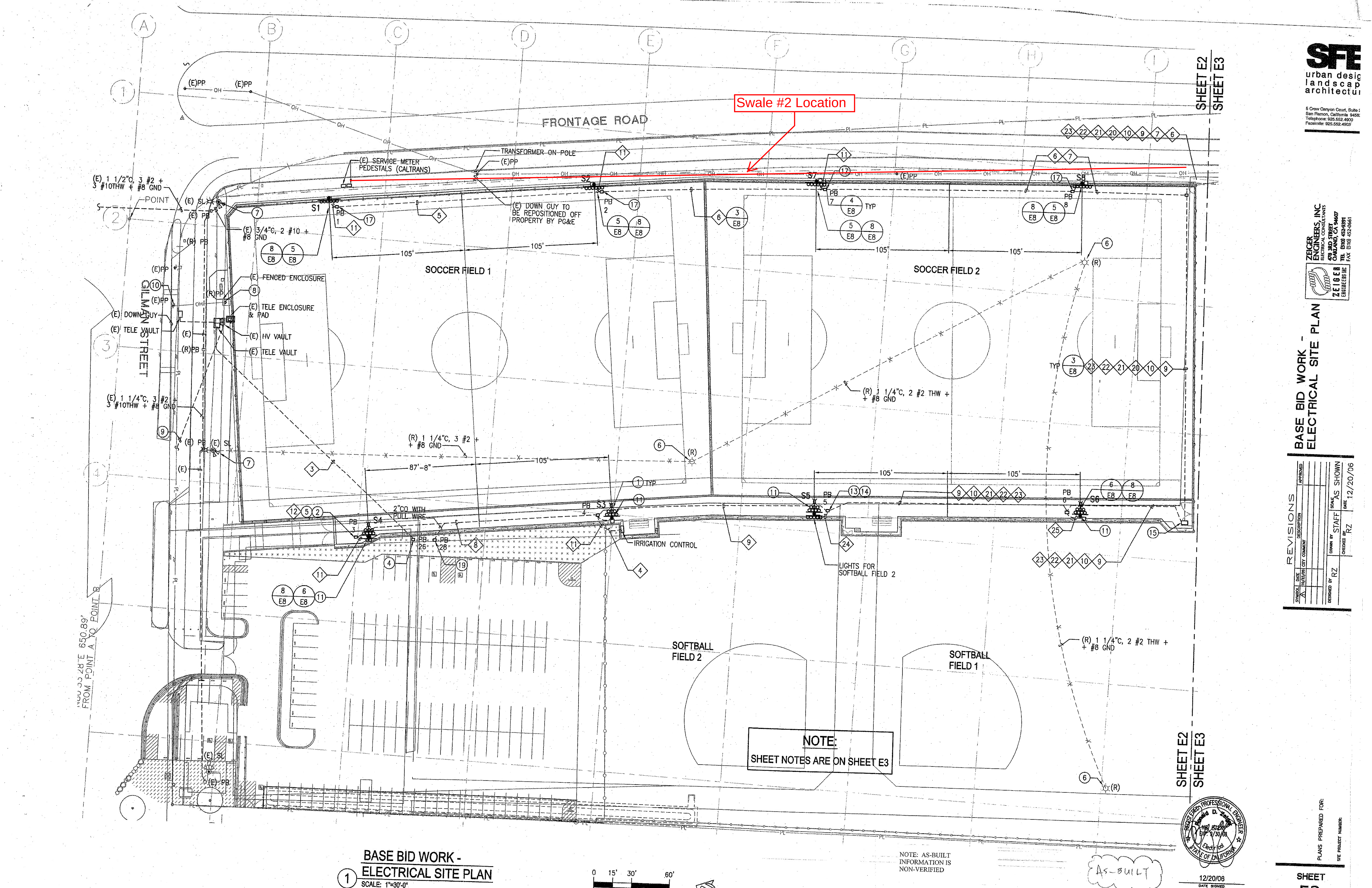

Swale #2 Location
FRONTAGE ROAD
GILMAN STREET
SOCCER FIELD 1
SOCCER FIELD 2
SOFTBALL FIELD 2
SOFTBALL FIELD 1
(E) SERVICE METER PEDESTALS (CALTRANS)
TRANSFORMER ON POLE
(E) DOWN GUY TO BE REPOSITIONED OFF PROPERTY BY PG&E
(E) FENCED ENCLOSURE
(E) TELE ENCLOSURE & PAD
(E) HV VAULT
(E) TELE VAULT
(E) DOWN GUY
(E) TELE VAULT
IRRIGATION CONTROL
LIGHTS FOR SOFTBALL FIELD 2
2"CO WITH PULL WIRE
(R) 1 1/4"C, 3 #2 + #8 GND
(R) 1 1/4"C, 2 #2 THW + #8 GND
(E) 1 1/2"C, 3 #2 + 3 #10THW + #8 GND
(E) 1 1/4"C, 3 #2 + 3 #10THW + #8 GND
(E) 3/4"C, 2 #10 + #8 GND
POINT
N00°33'28"E 650.89' FROM POINT A TO POINT B
NOTE:
SHEET NOTES ARE ON SHEET E3
SHEET E2
SHEET E3
BASE BID WORK - ELECTRICAL SITE PLAN
SCALE: 1"=30'-0"
NOTE: AS-BUILT INFORMATION IS NON-VERIFIED
AS-BUILT
SFE
urban design
landscape
architecture
ZEIGER ENGINEERS, INC
478 3RD STREET, OAKLAND, CA 94607
BASE BID WORK - ELECTRICAL SITE PLAN
REVISIONS
AS SHOWN
12/20/06
STAFF
RZ
12/20/06
SHEET

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Phone: 925.941.0017
Fax: 925.941.0018
www.wreco.com

Attachment 2: Photo Documentation

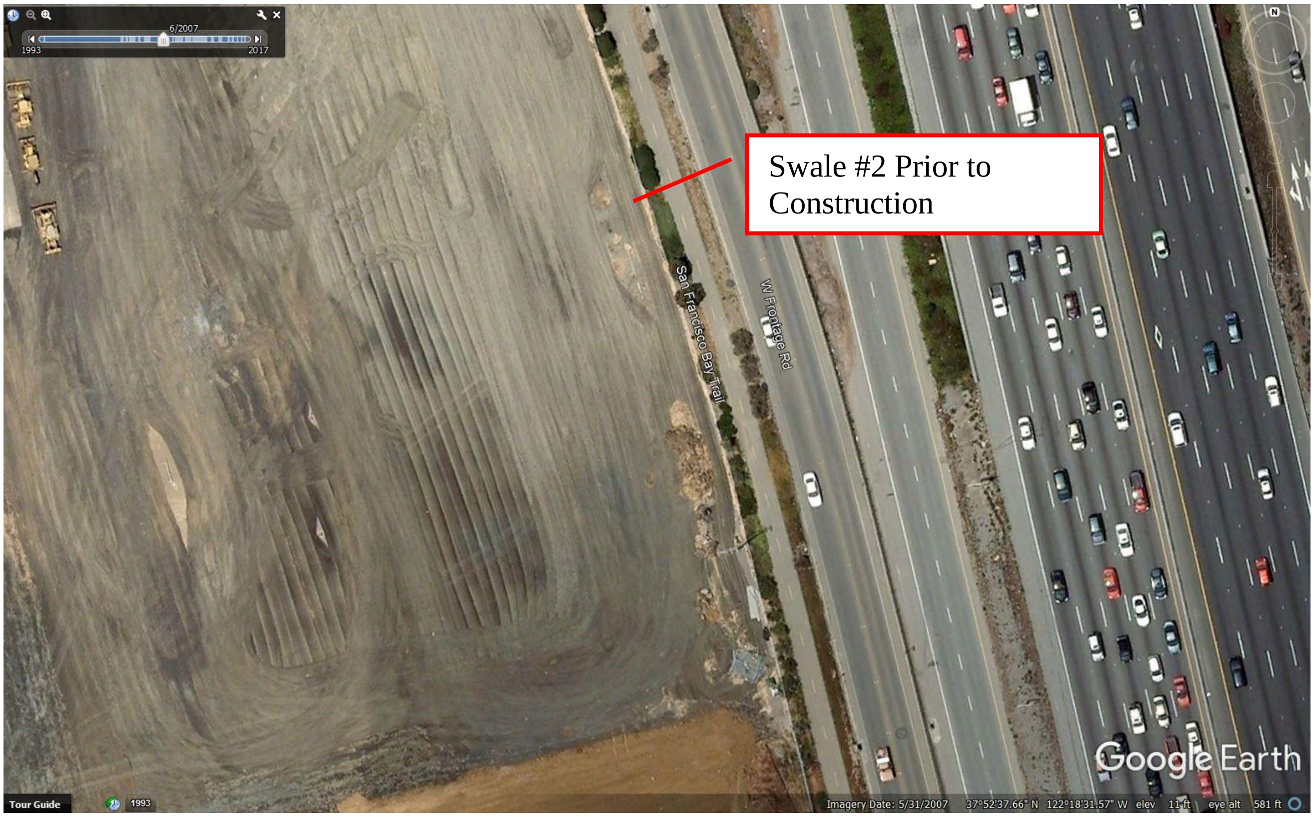

Photo 1. 2007 Areal Imagery of the Swale # 2 Area. North is located at the top of the Photo.

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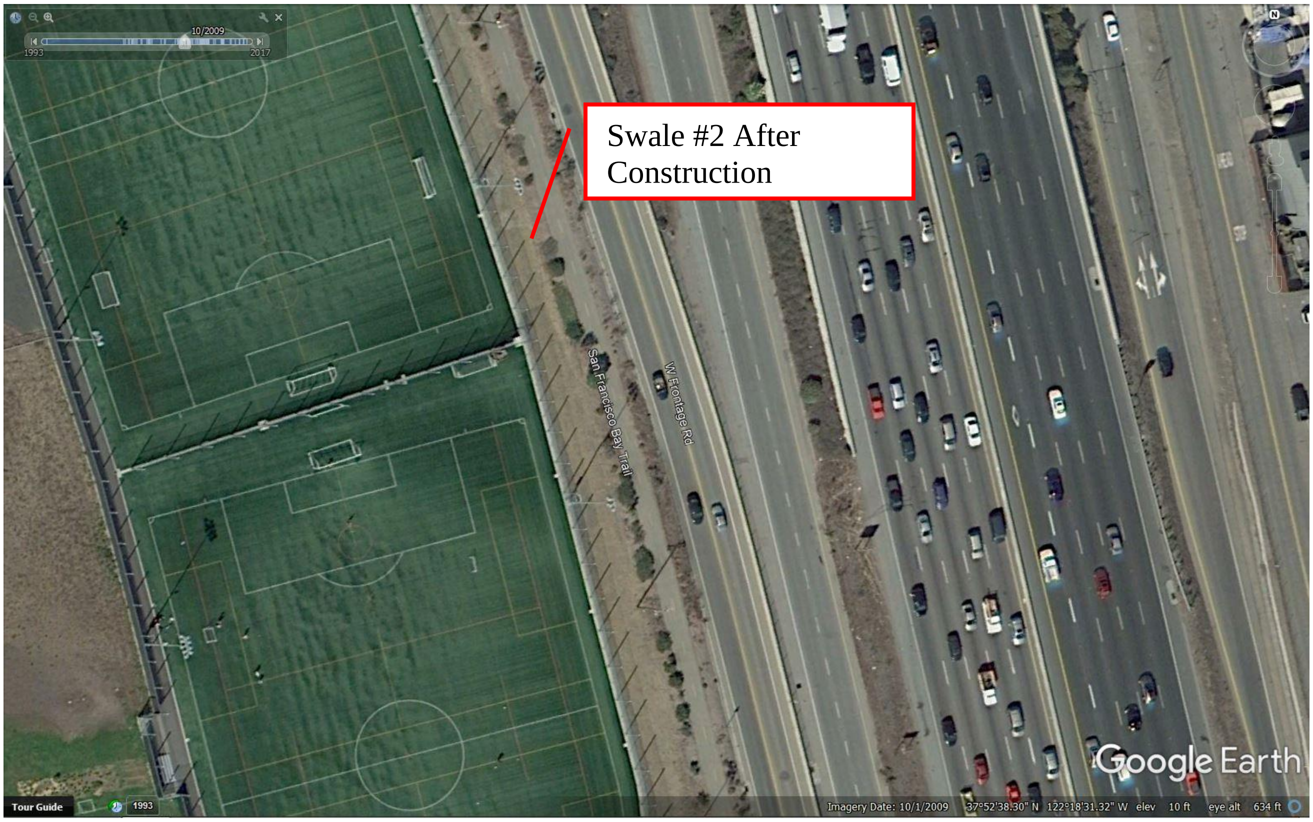

Photo 2. 2008 Areal Imagery of the Swale #2 Area. North is located at the top of the Photo.

WRECO
1243 Alpine Road, Suite 108
Walnut Creek, CA 94596
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www.wreco.com

Photo 3. Tall Vegetation in Swale #2 Taken on 3/17/2016, Looking South.

Photo 4. Mowed Vegetation in Swale #2 Taken on 6/30/2016, Looking North.

Photo 5. Drainage Inlet along Swale #2, Looking South.

Photo 6. Swale Conditions on December 14, 2017, Looking South.

Photo 7. Swale Conditions on December 14, 2017, Looking North.

Photo 8. Soil Test Pit 1 Location, Looking Southeast.

Attachment 3: December 14, 2017 Wetland Delineation Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-80 / Gilman St. City/County: Berkeley/Alameda Sampling Date: 12/14/17

Applicant/Owner: ______ State: CA Sampling Point: 1

Investigator(s): J. Elia, G. Wattley Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): ~~[illegible]~~ convex Slope (%): 2

Subregion (LRR): C - Mediterranean Lat: ______ Long: ______ Datum: WGS 84

Soil Map Unit Name: 146 - Urban land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		X
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Taken in the center of the swale between two drainage inlets.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Plantago lanceolata	3		FAC
2. Helminthotheca echiodes	7		FAC
3. Geranium ~~ro~~tundifolium	10		UPL
4. Trifolium hirtum	45	Yes	UPL
5. Lolium perenne	35	Yes	FAC
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______ % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	45	x 3 = 135
FACU species		x 4 =
UPL species	55	x 5 = 275
Column Totals:	100 (A)	410 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3								Top soil, organic layer
3-8	10YR 2/2	30	10YR 4/6	70	D	M	Clay loam.	Gravel < 1 inch.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No X

Remarks:
Although redox was observed, it does not meet any criteria for soil chroma or value to be considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______
Water Table Present? Yes ______ No ______ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Irrigation (sprinkler) system observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-80 Gilman St. City/County: Berkeley/Alameda Sampling Date: 12/14/17

Applicant/Owner: ______ State: ______ Sampling Point: 2

Investigator(s): J. Elia, G. Wattlex Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: NGS84

Soil Map Unit Name: 146 - Urban land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ______	No X
Hydric Soil Present?	Yes ______	No X
Wetland Hydrology Present?	Yes ______	No X

Is the Sampled Area within a Wetland? Yes ______ No X

Remarks:
Taken on slope above swale.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Helminthotheca echioides	3		FAC
2. Trifolium hirtum	35	Yes	UPL
3. Plantago lanceolata	1		FAC
4. Geranium dissectum	40	Yes	UPL
5. Lolium perenne	16		FAC
6.			
7.			
8.			
= Total Cover	95		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	20	x 3 = 60
FACU species	______	x 4 = ______
UPL species	75	x 5 = 375
Column Totals:	95 (A)	435 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ______ No X

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
1-2	10YR 3/3	100						Organic layer, top soil
2-6	10YR 3/4	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky soil, compacted

Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:

Based on rocky soil conditions, test pit was only performed up to 6 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: ______ City/County: ______ Sampling Date: 12/14/17

Applicant/Owner: ______ State: ______ Sampling Point: 3

Investigator(s): J. Elia, G. Wattley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: WGS 84

Soil Map Unit Name: 146- urban land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:
Taken in center of swale, near southern limits.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1 m²)			
1. Helminthotheca echoides	30	Yes	FAC
2. Foeniculum Vulgare	10		UPL
3. Geranium rotundifolium	3		UPL
4. Geranium dissectum	2		UPL
5. Trifolium hirtum	35	Yes	UPL
6. Lolium Perenne	10		FAC
7.			
8.			
= Total Cover	90		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	40	x 3 = 120
FACU species		x 4 =
UPL species	50	x 5 = 250
Column Totals:	90 (A)	370 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2							organic layer, top soil	
2-12	10YR 4/2	100					clay loam	Gravel 1-2 inch

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): ___________

Water Table Present? Yes _____ No _____ Depth (inches): ___________

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): ___________

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: ______ City/County: ______ Sampling Date: 12/14/17

Applicant/Owner: ______ State: ______ Sampling Point: 4

Investigator(s): J. Elia, G. Wattley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: WGS 84

Soil Map Unit Name: 146- Urban land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Taken on slope above swale.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1. Coyote Brush	25	Yes	UPL
2.			
3.			
4.			
5.			
= Total Cover	25		
Herb Stratum (Plot size: 1 M²)			
1. Plantago lanceolata	5		FAC
2. Foeniculum vulgare	1		UPL
3. Lolium Perenne	9		FAC
4.			
5.			
6.			
7.			
8.			
= Total Cover	15		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	14	x 3 = 42
FACU species		x 4 =
UPL species	26	x 5 =
Column Totals:	40 (A)	130 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/1	100						rocky, unconsolidated
1-4	10YR 4/3	100					Sandy	loam. Loose

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rocky layer

Depth (inches): 4

Hydric Soil Present? Yes ___ No X

Remarks:

Soil appears to be fill type material, based on rocky material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Cuyler Stapelmann

From: Montero, Carie <Carie.Montero@parsons.com>
Sent: Wednesday, January 10, 2018 3:10 PM
To: Matthew Rechs (Matthew.Rechs@dot.ca.gov)
Cc: Yeakel, John@DOT; 'Herman, Paul@DOT'; Susan Chang; Pimentel, Rodney
Subject: FW: Gilman JD Update- revised BSA map
Attachments: Surveyed Features.jpg; Surveyed Features.pdf

Hi Matt,

Please see the attached map for submittal to the USACE.

Let me know if you have questions or need any other information.

Regards,

Carie

Carie S. Montero, M.A., RPA
Senior Project Manager-Environmental Practice Lead
PARSONS
Infrastructure
555 12th Street, Suite 1850 ◆ Oakland, CA 94607
Office 510.907.2163 ◆ Cell 510-914-2047
carie.montero@parsons.com ◆ www.parsons.com

From: Jared Elia [mailto:Jared_Elia@wreco.com]
Sent: Wednesday, January 10, 2018 11:48 AM
To: Montero, Carie <Carie.Montero@parsons.com>
Cc: Sandra Etchell <Sandra_Etchell@wreco.com>
Subject: RE: Gilman JD Update

Hi Carie,
Attached is the revised figure in PDF and jpg format. Let me know if there's additional changes.

Thanks!
Jared Elia | Biologist
WRECO
Desk: 925-941-0017 ext. 229

From: Montero, Carie [mailto:Carie.Montero@parsons.com]
Sent: Wednesday, January 10, 2018 11:16 AM
To: Jared Elia <Jared_Elia@wreco.com>

Cc: Sandra Etchell <Sandra_Etchell@wreco.com>
Subject: FW: Gilman JD Update

Hi Jared,

Please see the email below and send over a new figure with the mapping adjusted accordingly.

Thanks,

Carie

Carie S. Montero, M.A., RPA
Senior Project Manager-Environmental Practice Lead
PARSONS
Infrastructure
555 12th Street, Suite 1850 ◆ Oakland, CA 94607
Office 510.907.2163 ◆ Cell 510-914-2047
carie.montero@parsons.com ◆ www.parsons.com

From: Rechs, Matthew@DOT [mailto:Matthew.Rechs@dot.ca.gov]
Sent: Wednesday, January 10, 2018 9:32 AM
To: Montero, Carie <Carie.Montero@parsons.com>
Cc: Pimentel, Rodney <Rodney.Pimentel@parsons.com>; Susan Chang <schang@alamedactc.org>; Yeakel, John@DOT <john.yeakel@dot.ca.gov>; Herman, Paul@DOT <Paul.Herman@dot.ca.gov>
Subject: Gilman JD Update

Hello Carie,

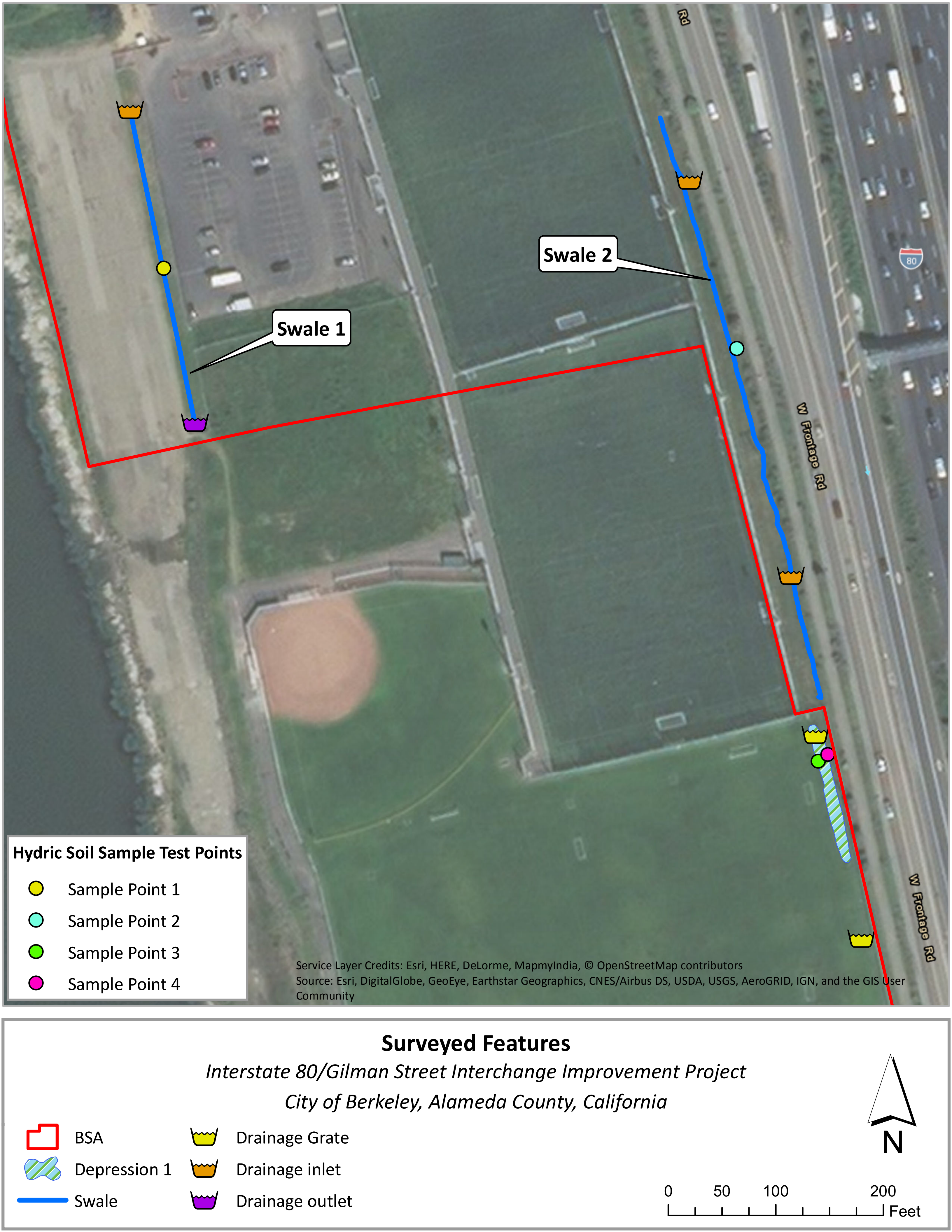
Good news on the Gilman project. Janelle called me late yesterday with an update on the Gilman JD. She has confirmed that the Corp is NOT going to take jurisdiction over 'Swale 1' and 'Swale 2', so we are free to work in those areas.

'Depression 1' is still questionable for them and would require another season with the sprinklers turned off to make a determination. However, as the project is not impacting that area we just need to assure them that it is outside of our project limits. To do this we need to revise Figure 10 (detail of the sports field) so that the BSA line runs outside of the fence. See the attached image for my crude example of what they want.

Now that the matter is resolved it will not be necessary for you or Susan to attend a special meeting with the Corp. She did not give me a date when we would receive the actual approved JD. I will be in a meeting from 10am-11:30am, but will be around most of the day if you have any questions.

Regards,

Matthew A. Rechs
Environmental Planner (NS)
Office of Biological Science and Permits
Caltrans District 4
111 Grand Ave, MS-8E
Oakland, CA 94612



Surveyed Features

Interstate 80/Gilman Street Interchange Improvement Project

City of Berkeley, Alameda County, California

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET, 16TH FLOOR
SAN FRANCISCO, CALIFORNIA 94103-1398

MAR 16 2018

Regulatory Division

Subject: File Number 2017-00207S

Ms. Jo Ann Cullom
California Department of Transportation, District 4
PO Box 236600
Oakland, California 94623

Dear Ms. Cullom:

This correspondence is in reference to your submittal of September 1, 2017, requesting an approved jurisdictional determination of the extent of navigable waters of the United States and waters of the United States occurring on a 59.5 acre site at the I-80 / Gillman Street Interchange in the City of Berkeley, Alameda County, California.

All proposed discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the United States; or below the high tide line in tidal waters of the United States; or within the lateral extent of wetlands adjacent to these waters, typically require Department of the Army authorization and the issuance of a permit under Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 et seq.). Waters of the United States generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the United States may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary; and certain ephemeral streams in the arid West.

All proposed structures and work, including excavation, dredging, and discharges of dredged or fill material, occurring below the plane of mean high water in tidal waters of the United States, in former diked baylands currently below mean high water, outside the limits of mean high water but affecting the navigable capacity of tidal waters or below the plane of ordinary high water in non-tidal waters designated as navigable waters of the United States, typically require Department of the Army authorization and the issuance of a permit under section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 et seq.). Navigable waters of the United States generally include all waters subject to the ebb and flow of the tide, and/or all waters presently used, or have been used in the past, or may be susceptible for future use to transport interstate or foreign commerce.

The enclosed delineation map titled "I-80 / Gillman Street Interchange, City of Berkeley, California," in two sheets, date certified February 6, 2018, reflects the absence of jurisdictional waters of the United States and navigable waters of the United States within the boundary area of the site, as defined by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. This approved jurisdictional determination is based on the current upland conditions of the site, as verified during a field investigation of July 18, 2017, a review of available digital photographic imagery, and a review of other data included in your submittal. This approved jurisdictional determination will expire in five years from the date of this letter unless new information or a change in field conditions warrants a revision to the delineation map prior to the expiration date. The basis for this approved jurisdictional determination is explained in the enclosed *Approved Jurisdictional Determination Form.*

The current absence of jurisdictional navigable waters of the United States and waters of the United States within the boundary area of the site does not obviate any requirement to obtain other Federal, State, or local approvals necessitated by law. Any impacts to federally-listed threatened or endangered species and/or designated critical habitat may be subject to regulation by the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under Section 10 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*). Sites located along the margins of San Francisco Bay may be subject to regulation by the San Francisco Bay Conservation and Development Commission under the McAteer-Petris Act of 1965, as amended (Public Resources Code § 66600 *et seq.*), or the Suisun Marsh Preservation Act of 1977, as amended (Public Resources Code §§ 29000-29612 *et seq.*). Therefore, you are urged to contact this agency directly to determine the need for other authorizations or permits.

You are advised that the approved jurisdictional determination may be appealed through the U.S. Army Corps of Engineers' Administrative Appeal Process, as described in 33 C.F.R. § 331 (65 Fed. Reg. 16,486; Mar. 28, 2000) and outlined in the enclosed flowchart and Notification of Administrative Appeal Options, Process, and Request for Appeal (NAO-RFA) Form. If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to this office for reconsideration of this decision. If you do not provide new information to this office, you may elect to submit a completed NAO-RFA Form to the Division Engineer to initiate the appeal process; the completed NAO-RFA Form must be submitted directly to the Appeal Review Officer at the address specified on the NAO-RFA Form. You will relinquish all rights to a review or an appeal unless this office or the Division Engineer receives new information or a completed NAO-RFA Form within 60 days of the date on the NAO-RFA Form. If you intend to accept the approved jurisdictional determination, you do not need to take any further action associated with the Administrative Appeal Process.

You may refer any questions on this matter to Janelle Leeson of my Regulatory staff by telephone at (415) 503-6773 or by e-mail at Janelle.D.Leeson@usace.army.mil. All correspondence should be addressed to the Regulatory Division, South Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website:
http://www.spn.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

for

Rick M. Bottoms, Ph.D.
Chief, Regulatory Division

Enclosures

Copy Furnished (w/ encls):

Caltrans, District 4, Oakland, CA (Attn.: Mr. Matthew Rechs)

Copy Furnished (w/ encl 1 only):

CA RWQCB, Oakland, CA

Copy Furnished (w/o encls):

CA SWRCB, Sacramento, CA

DRY LAND APPROVED JURISDICTIONAL DETERMINATION FORM[1]
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): February 6, 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: San Francisco District, Interstate Route 80 / Gillman Street Interchange, 2017-00207S

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: CA County/parish/borough: Alameda City: Berkeley
Center coordinates of site (lat/long in degree decimal format): Lat. 37.878080 °, Long. -122.307242 °
Universal Transverse Mercator:
Name of nearest waterbody: SF Bay
Name of watershed or Hydrologic Unit Code (HUC): 18050002

- [x] Check if map/diagram of review area is available upon request.
- [ ] Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- [ ] Office (Desk) Determination. Date:
- [x] Field Determination. Date(s): July 18, 2017

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

SECTION III: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- [x] Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- [x] Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - [ ] Office concurs with data sheets/delineation report.
  - [x] Office does not concur with data sheets/delineation report: Data sheets contain incorrect vegetation indicator status and therefore do not represent the correct determination for the presence of hydrophytic vegetation.
- [ ] Data sheets prepared by the Corps:
- [ ] U.S. Geological Survey Hydrologic Atlas:
  - [ ] USGS NHD data.
  - [ ] USGS 8 and 12 digit HUC maps.
- [ ] U.S. Geological Survey map(s). Cite scale & quad name:
- [ ] USDA Natural Resources Conservation Service Soil Survey. Citation:
- [ ] National wetlands inventory map(s). Cite name:
- [ ] State/Local wetland inventory map(s):
- [ ] FEMA/FIRM maps:
- [ ] 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date):
- [ ] or [x] Other (Name & Date):
- [x] Previous determination(s). File no. and date of response letter: SPN-2007-400314
- [ ] Applicable/supporting case law:
- [ ] Applicable/supporting scientific literature:
- [x] Other information (please specify): As-build designs

B. REQUIRED ADDITIONAL COMMENTS TO SUPPORT JD. EXPLAIN RATIONALE FOR DETERMINATION THAT THE REVIEW AREA ONLY INCLUDES DRY LAND: Swale 1:

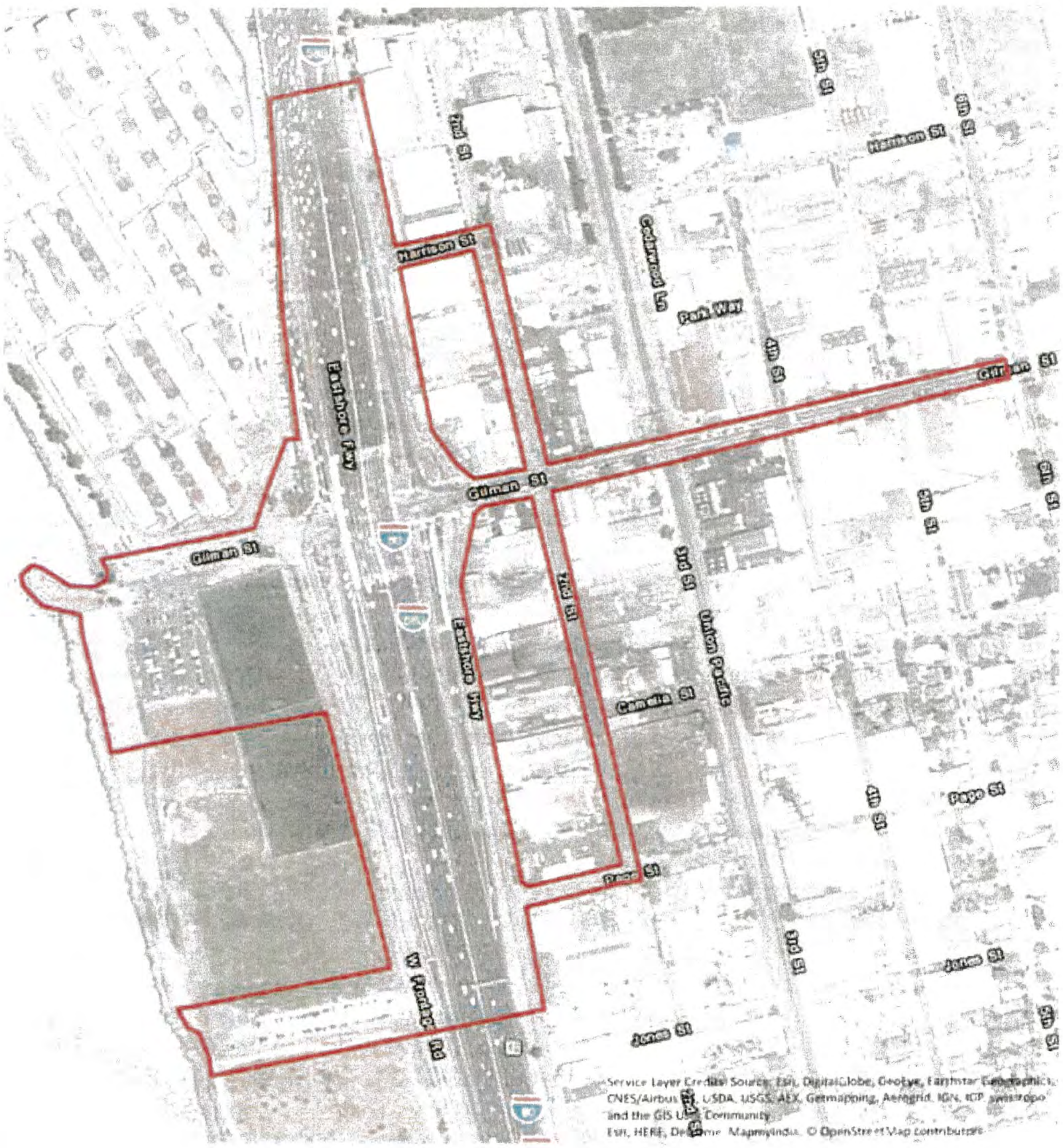
Swale 1: Swale 1 is an approximate 300-foot long depression receiving runoff from a drainage outlet. Per design plans provided by the applicant, swale one is a constructed bio-swale for the purpose of stormwater treatment. Per the definition of Waters of the U.S. (40 CFR 230.3(s)), waste

---

[1] This form is for use only in recording approved JDs involving dry land. It extracts the relevant elements of the longer approved JD form in use since 2007 for aquatic areas and adds no new fields.

treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States. Furthermore, a preliminary jurisdictional determination (PJD) was completed for this portion of the project area, found in file SPN-2007-400314. The PJD verifies that the bio-swale was constructed in uplands.

Swale 2: Swale 2 is an approximate 560-foot long depression receiving runoff from the Bay Trail. The swale drains into two different drainage inlets, located near both ends of the swale. The inlets connect to the City storm drain system. A PJD was completed for this portion of the project area, found in file SPN-2007-400314. This PJD and design plans provided by the applicant depict that swale 2 is a ditch constructed entirely within uplands.



Study Area

Interstate 80/Gilman Street Interchange Improvement Project

City of Berkeley, Alameda County, California

Study Area

0 150 300 600 Feet

N

Figure 4. Study Area Map

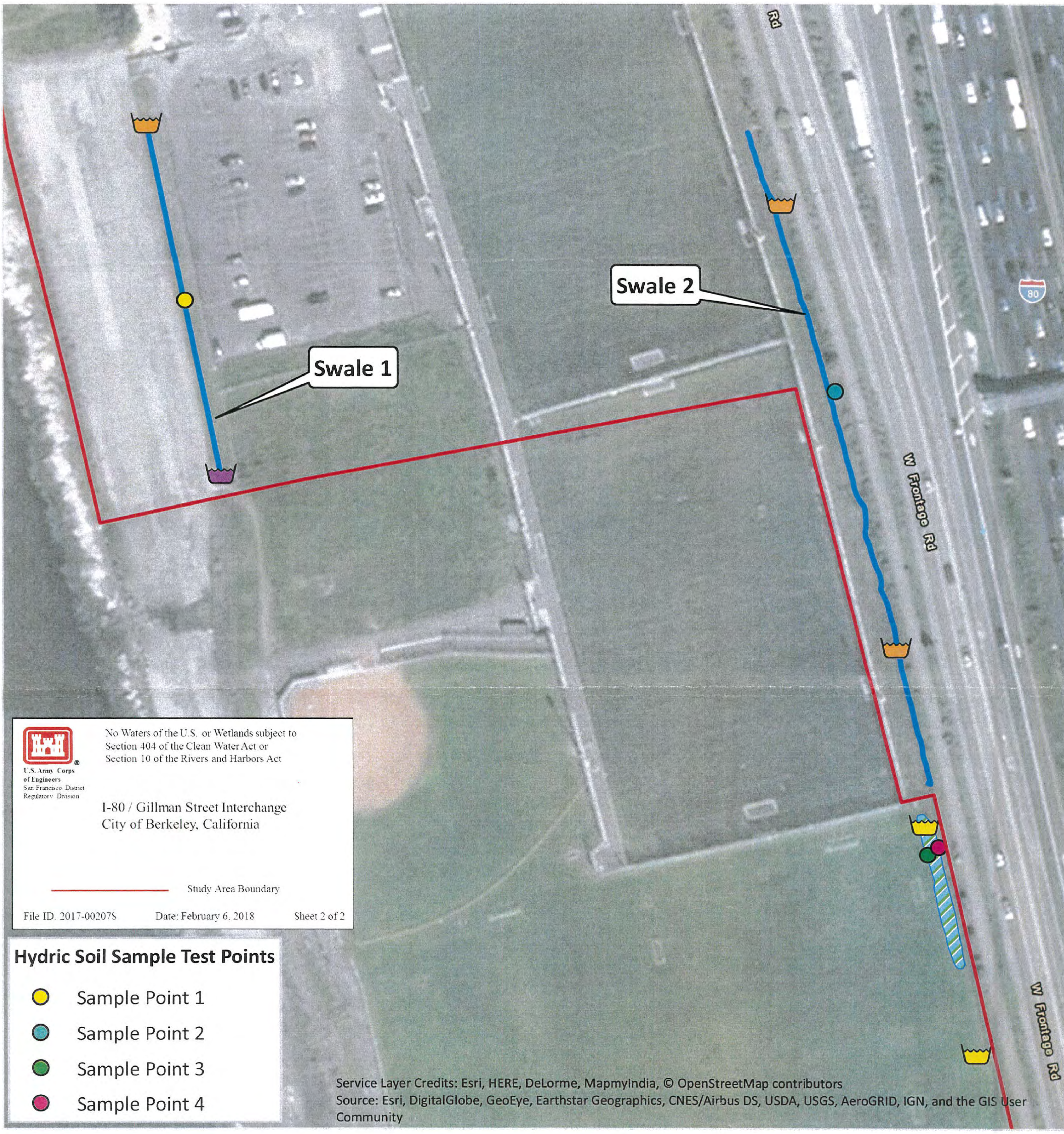
U.S. Army Corps of Engineers
San Francisco District
Regulatory Division

No Waters of the U.S. or Wetlands subject to Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act

I-80 / Gillman Street Interchange
City of Berkeley, California

Study Area Boundary

File ID. 2017-00207S Date: February 6, 2018 Sheet 1 of 2



Surveyed Features

Interstate 80/Gilman Street Interchange Improvement Project

City of Berkeley, Alameda County, California

BSA — Drainage Grate

Depression 1 — Drainage inlet

Swale — Drainage outlet

N

0 50 100 200 Feet

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: California Department of Transportation		File Number: 2017-00207S	Date: 6 Feb 2018
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:
Katerina Galacatos
South Branch Chief, Regulatory Division
San Francisco District, U.S. Army Corps of Engineers
1455 Market Street, 16th floor
San Francisco, CA 94103-1398
Phone: (415) 503-6778 Email: Katerina.galacatos@usace.army.mil

If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh
Administrative Appeal Review Officer,
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: (415) 503-6574 Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.	Date:	Telephone number:

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

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Mr. Mattew Rechs
California Department of Transportation, District 4
P..O. Box 236600
Oakland, California 94623

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Appendix E Wetland Delineation Report Addendum

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I-80/GILMAN STREET INTERCHANGE IMPROVEMENT PROJECT

DELINEATION OF WATERS OF THE UNITED STATES - ADDENDUM

CALTRANS DISTRICT 04

04-ALA-80-PM 6.38/6.95

EA 04-0A7700/ Project ID 04000020155

November 2018 Addendum to Revised August 2017 Document

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Delineation of Waters of the United States - Addendum

I-80/Gilman Street Interchange Improvement Project

Caltrans District 04

04-ALA-80-PM 6.38/6.95

EA 04-0A7700/ Project ID 04000020155

November 2018 Addendum to Revised August 2017 Document

Prepared By: Paula Gill Date: 11/1/18

Paula Gill, Senior Regulatory Specialist
415-317-4941
Johnson Marigot Consulting, LLC
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Brisbane, CA 94005

Reviewed/Recommend for
Approval By: Trinity Nguyen Date: 11/5/2018

Trinity Nguyen, Director of Project Delivery
510-208-7441
Alameda County Transportation Commission
1111 Broadway, Suite 800
Oakland, CA 94607

Approved By: John Yeakel Date: 11/9/2018

John Yeakel, Branch Chief, Alameda and Contra Costa
510-286-5681
Division of Environmental Planning and Engineering, Caltrans District 4
111 Grand Avenue
Oakland, CA 94612

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

LIST OF TABLES

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1. Introduction

The California Department of Transportation (Caltrans) and the Alameda County Transportation Commission (Alameda CTC) are proposing to construct the Interstate (I-) 80/Gilman Street Interchange Improvement Project (Project) to improve traffic, pedestrian, and bicycle operations at the I-80/Gilman Street interchange in Berkeley and Albany, Alameda County, California. A Wetland Delineation report (delineation) was completed and revised in August of 2017, and the U.S. Army Corps of Engineers (Corps) verified the wetland delineation on March 16, 2018.

Since verification of the delineation, changes to the proposed project were made to accommodate stakeholder requests and to comply with requirements from Caltrans' Municipal Separate Storm Sewer System (MS4) permit, and the National Pollutant Discharge Elimination System (NPDES) No. CAS000003 (State Water Resources Control Board [SWRCB] Order No. 2012-0011-DWQ, amended by Order 2015-0036EXCEX - conformed and effective April 17, 2015). The changes, described below, required an extension of the survey area boundary of the previously completed delineation. This addendum to the wetland delineation describes the extent and location of waters of the United States potentially subject to the Corps' jurisdiction pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344) and Section 10 of the Rivers and Harbors Act of 1899 (RHA) (33 U.S.C. Section 403) within the expanded study area. This investigation of potentially jurisdictional waters of the U.S. follows the methods described in the *Corps' Wetlands Delineation Manual* (USACE 1987), supplemented with guidance as directed by the *Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). The waters of the U.S. boundaries depicted in this report represent a calculated estimation of the boundaries of aquatic features and are subject to modification following the Corps' verification process. Determination of Corps' jurisdiction over the depicted wetlands and waters of the U.S. is also subject to Corps' verification process.

1.1 REVISED PROJECT DESCRIPTION

Revised work, within waters of the U.S, would include installation of a separation device underground along Gilman Street to separate trash, mercury, and polychlorinated biphenyls (PCBs). A tidal flap gate would be installed at the existing headwall which supports the outfall of the 60" reinforced concrete pipe that runs parallel to the southern side of Gilman Street. Replacement of the existing headwall and associated riprap may include in-water work. Dewatering or a coffer dam may also be required.

1.2 STUDY AREA

The addendum study area, adds areas not previously verified by Corps (Appendix A) but within the Biological Study Area (BSA) defined within the Natural Environment Study (NES). In total, the BSA for the revised project is defined as the area (land and water) that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. For this Project, the BSA was established to encompass the limits of construction activity (i.e., Project footprint) and surrounding areas potentially inhabited by regional special-status species that could be affected by the Project, where appropriate. In urban areas, the BSA is limited to the Project footprint as there are few biological resources, and any biological resources that are present would be habituated to continuous disturbance. In vegetated areas, the BSA includes a buffer around the

Project footprint so as to include adjacent biological resources that may be indirectly impacted by construction activities. This buffer is generally limited to 50-ft beyond the Project footprint. However, the entire spit of land at the end of Gilman Street was included in the BSA, and the BSA near the staging areas south of the Tom Bates Sports Complex extends to existing fence lines to the north and south, and to the shore of San Francisco Bay to the west; these were included in the BSA with a non-standard buffer. The Study Area and BSA are also consistent with the scope of analysis to be used by Caltrans (acting federal lead) for National Environmental Policy Act and for Federal Endangered Species Act compliance. At the Corps' request, a portion of the study area boundary within the Cordornices Creek riparian canopy was removed as work is not proposed in this area.

Generally, the study area is located at the western terminus of Gilman Street, at the westernmost boundary of the City of Berkeley, Alameda County, California, within the Richmond U.S. Geological Survey (USGS) 7.5' topographic quadrangle (quad) (T1S R4W) (Figure 1). The coordinates for the approximate center of the study area limits are 37.877632° north and -122.309809° west. The study area can be accessed by driving west on Gilman Street from the Interstate 80 Gilman Street exit in the City of Berkeley; the study area occurs immediately west of the parking area along the shoreline.

2. Methods

The boundaries of potential waters of the U.S. were mapped using a Juniper Geode Global Navigation Satellite System (GNSS) with sub-meter accuracy, using standard field methodologies (as established in the *Corps' Wetlands Delineation Manual* [USACE 1987] and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* [USACE 2008]). A color aerial photograph (1"=100' scale, Google Earth 2018) was used to assist with mapping and ground-truthing. Standard field methodologies (i.e., paired data set analyses) were used and all wetland data were recorded on Arid West Routine Wetland Determination Forms (Appendix B). The *Jepson Manual, Vascular Plants of California, Jepson Flora Project* (Jepson Flora Project 2018) was used for plant nomenclature and identification. Plant wetland indicator status was provided by The National Wetland Plant List: 2016 wetland ratings (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016). *Munsell Soil Color Charts* (Kollmorgen Instruments Co. 1990) and the *Soil Survey of Alameda County, California* (U.S. Department of Agriculture, Soil Conservation Service) were used to aid in identifying hydric soils in the field. The National Resource Conservation Service (NRCS) online web Soil Survey was used to obtain soil information.

A field survey was conducted on April 11, 2018, by Johnson Marigot Consulting, LLC personnel (Ms. Paula Gill, Ms. Sadie McGarvey, and Ms. Lauren Bingham) and again on May 10, 2018 by Ms. Sadie McGarvey. Staff walked the approximately 10.25-acre site to determine the location and extent of potential waters of the U.S. within the study area. Mapping of the High Tide Line (HTL) was completed at low tide (approximately 4pm & noon respectively). Four (4) representative data point locations were sampled to evaluate whether or not the vegetation, hydrology, and soils data supported a determination of wetland or non-wetland status.

2.1 WATERS OF THE UNITED STATES

Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. Wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. 328.3(b), 51 F.R. 41250, November 13, 1986]. Wetlands can be perennial or seasonal, and isolated or adjacent to other waters.

Other waters are non-tidal, perennial, and intermittent watercourses and tributaries to such watercourses [33 C.F.R. 328.3(a), 51 F.R. 41250, November 13, 1986]. The limit of Corps jurisdiction for non-tidal watercourses (without adjacent wetlands) is defined in 33 C.F.R. 328.4(c)(1) as the "ordinary high water mark" (OHWM). The OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. 328.3(e), 51 F.R. 41250, November 13, 1986]. The bank-to-bank extent of the channel that contains the water-flow during a normal rainfall year generally serves as a good first approximation of the lateral limit of Corps' jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

The limit of Corps' jurisdiction in tidal watercourses is defined as the "high tide line" (HTL). The HTL is defined as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the 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 the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm." [33 CFR 328.3].

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 pursuant to Section 10 of the RHA of 1899 (33 U.S.C. Section 403). Additionally, all work and structures proposed in unfilled portions of the interior of diked areas below former MHW must also be authorized under Section 10 of the same statute. MHW is defined as is the average of all the high water heights observed over a period of several years.

3. Environmental Setting

3.1 STUDY AREA DESCRIPTION

The study area can be broken into descriptive components including beach (1.70 acres), riprap (0.77 acre), upland (1.16 acres) and urban (6.50 acres) (Figure 2). Photographs of areas in which USACE jurisdictional aquatic resources were documented are included as Appendix C.

3.1.1 BEACH

From the toe of the riprap bayward, there is a wide sandy beach. At low tide, when the extent of the beach is exposed, there is approximately 150 feet between the toe of the riprap slope and the bay water. Large cobbles, covered in algae, have been deposited along the beach along with typical shells. Litter associated with the adjacent land use is also apparent, including tires, shopping carts, and other debris.

3.1.2 RIPRAP (SLOPE PROTECTION)

Erosion control in the form of riprap has been installed along the approximately 1.5:1 slope. The riprap is made of natural boulders and broken concrete. The HTL is visible along the riprap as algae has accumulated along the riprap that is generally inundated at daily high tide events.

3.1.3 UPLAND

Dominant species observed within the upland include non-native weedy species such as Italian thistle (*Carduus pycnocephalus*) (NL), ripgut brome (*Bromus diandrus*) (NL), soft chess (*Bromus hordeaceus*) (FACU), and geranium (*Geranium dissectum* and G*. molle*) (NL). Other observed species included jointed charlock (*Raphanus raphanistrum*) (NL), Bermuda buttercup (*Oxalis pes-caprae*) (NL), New Zealand spinach (*Tetragonia tetragonioides*) (NL), foxtail barley (*Hordeum murinum*) (FACU), wildoats (*Avena fatua*) (NL), fennel (*Foeniculum vulgare*) (NL), narrow leaved plantain (*Plantago lanceolata*) (FAC), milk thistle (*Silybum marianum*) (NL), Italian ryegrass (*Festuca perennis*) (FAC), spring vetch (*Vicia sativa*) (FACU), wild onion (*Allium triquetrum*) (NL), cutleaf geranium (*Geranium dissectum*) (NL), cheeseweed (*Malva parviflora*) (NL), and panic veldtgrass (*Ehrharta erecta*) (NL). Occasional small burrows occupied by ground squirrels were observed. Informal trails formed from recreational use were observed along the outcropping south of the project boundary.

3.1.4 URBAN

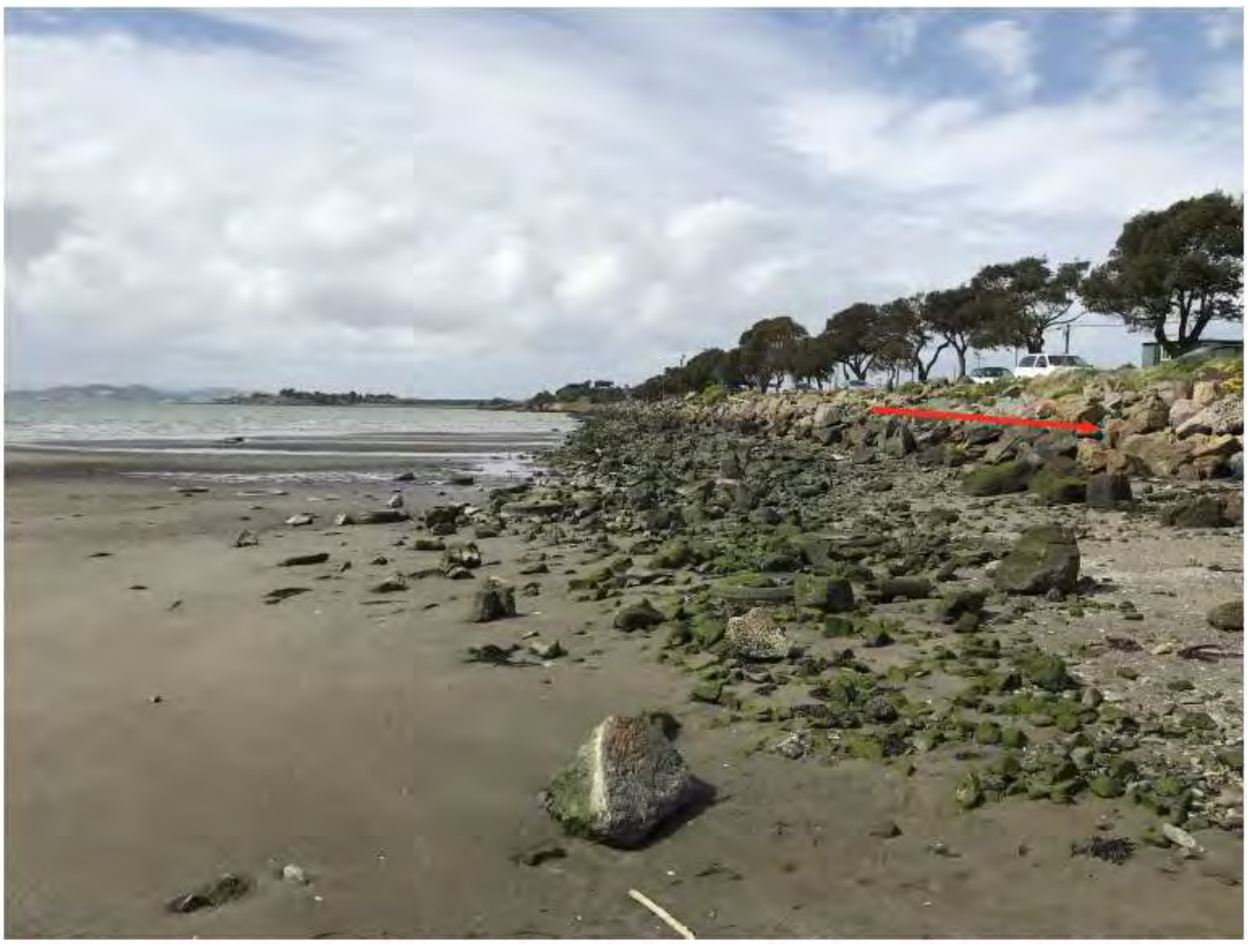
Components of the study area identified as "urban" include the built environment such as sidewalks, roadways, residential and industrial uses. Observed plant species in these areas included common ornamentals and ruderal weeds well adapted to disturbed areas. Observed species included slender wild oats (*Avena barbata*) (NL), black mustard (*Brassica nigra*) (NL), ripgut brome (*Bromus diandrus*) (NL), slider willow herb (*Epilobium cilatum*) (FACW), red-stemmed filaree (*Erodium cicutarium*) (NL), Italian rye grass (*Festuca perennis*) (FAC), bedstraw (*Gallium sp*) (NL), English ivy (*Hedera helix*) (FACU), foxtail barley (*Hordeum murinum*) (FACU), prickly lettuce (FACU), scarlet pimpernel (*Lysimachia arvensis*) (FAC), wild radish (*Raphanus sativus*) (FAC), and spring vetch (*Vicia sativa*) (FACU).

4. Results

4.1 SECTION 404 CLEAN WATER ACT JURISDICTION

The limit of Corps' jurisdiction pursuant to Section 404 of CWA includes, wetlands, Other Waters of the U.S. and tidal watercourses. There is no potential for prolonged ponding of waters, and therefore no wetlands, within the expanded study area. This determination is supported by findings summarized in the attached Arid West Wetland Delineation forms (Appendix A). Similarly, there are no potential Other Waters of the U.S, beyond the areas along the shoreline below the MHW and HTL, within the study area boundary.

Characters observed indicative of the HTL included 1) line of algae along the shoreline protection, 2) fine shell and debris along the beach, and 3) deposition of floating debris near the algae colonization on shoreline protection. HTL is depicted by the red arrow below (photo taken from immediately north of the existing headwall, looking north).



4.2 SECTION 10 RIVERS AND HARBORS ACT JURISDICTION

The limit of Corps' jurisdiction pursuant to Section 10 of the RHA jurisdiction is defined as the area waterward of the MHW. For this location, MHW is defined as 5.79 feet (NAVD 88). The MHW was calculated by interpolating between the National Oceanic and Atmospheric Administration (NOAA) Richmond and Alameda tidal station as summarized in the Table 1.

Table 1. Mean High Water Data Summary

	Datum Sources					
	Alameda County	NOAA				Gilman
	Berkeley	Alameda (2011)	Richmond (2011)	Gilman Location (Interpolate)	Berkeley (2003)	Project
MHHW	6.2	6.60	6.06	6.41	6.10	6.41
MHW	N/A	5.98	5.45	5.79	5.49	5.79
MLW	N/A	1.14	1.12	1.13	1.14	1.13
MLLW	N/A	0	0	0	0	0
NAVD88	N/A	0.23	0	0.08	-0.13	0.08

Extent and location of Corps' jurisdiction, within the area of proposed impact, pursuant to Section 404 of the CWA and Section 10 of the RHA, is depicted in Figure 3. Further, extent and location of Corps' jurisdiction, within the entire study area, pursuant to Section 404 of the CWA and Section 10 of the RHA, is depicted in Figure 4.

5. Summary of Potential Jurisdictional Areas

A total of approximately 1.79 acres of Section 404 CWA regulated waters of the U.S. and approximately 1.64 acres of Section 10 of the RHA jurisdiction occurs within the expanded study area boundary. There are no regulated wetlands within the expanded study area boundary.

6. Reference

Environmental Laboratory. 1987. Army Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U. S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

Headquarters, U.S. Army Corps of Engineers (HQUSACE). 1992. Clarification and Interpretation of the 1987 Manual. Memorandum from Major General Arthur E. Williams. Dated: 6 March 1992.

Jepson Flora Project (eds.) 2018. *Jepson eFlora*, http://ucjeps.berkeley.edu/eflora/ [accessed on April 11, 2018].

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016.

United States Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

<u>LIST OF FIGURES</u>

Figure 1

Study Area Map

Figure 1. Study Area Map
Prepared by:
Sadie McGarvey
Johnson Marigot Consulting, LLC
November 1, 2018
37.882673°N, 122.305683°W
San Francisco Bay
80
580
Fourth Street
Sixth Street
Gilman Street
West Frontage Road
37.875881°N, 122.308918°W
JD Addendum Study Area
Data Points
Control Points
N
0
250
500
Feet
1 inch = 300 feet
*Study Area spans two 7.5-minute USGS Quadrangles: Richmond (north) and Oakland West (south)
Imagery: ESRI 2017

Figure 2

Study Area Components


Figure 2. Study Area Components
Prepared by:
Sadie McGarvey
Johnson Marigot Consulting, LLC
November 1, 2018
San Francisco Bay
Gilman Street
West Frontage Road
Fourth Street
Sixth Street
80
580
JD Addendum Study Area
Control Points
Habitat Types
Beach
Riprap
Upland
Urban
1 inch = 300 feet
N
0
250
500
Feet
Imagery: ESRI 2017

Figure 3

Unverified Delineation Map of Impact Area

Figure 3. Unverified Delineation Map of Impact Area

Prepared by: Sadie McGarvey, Johnson Marigot Consulting, LLC (June 22, 2018)

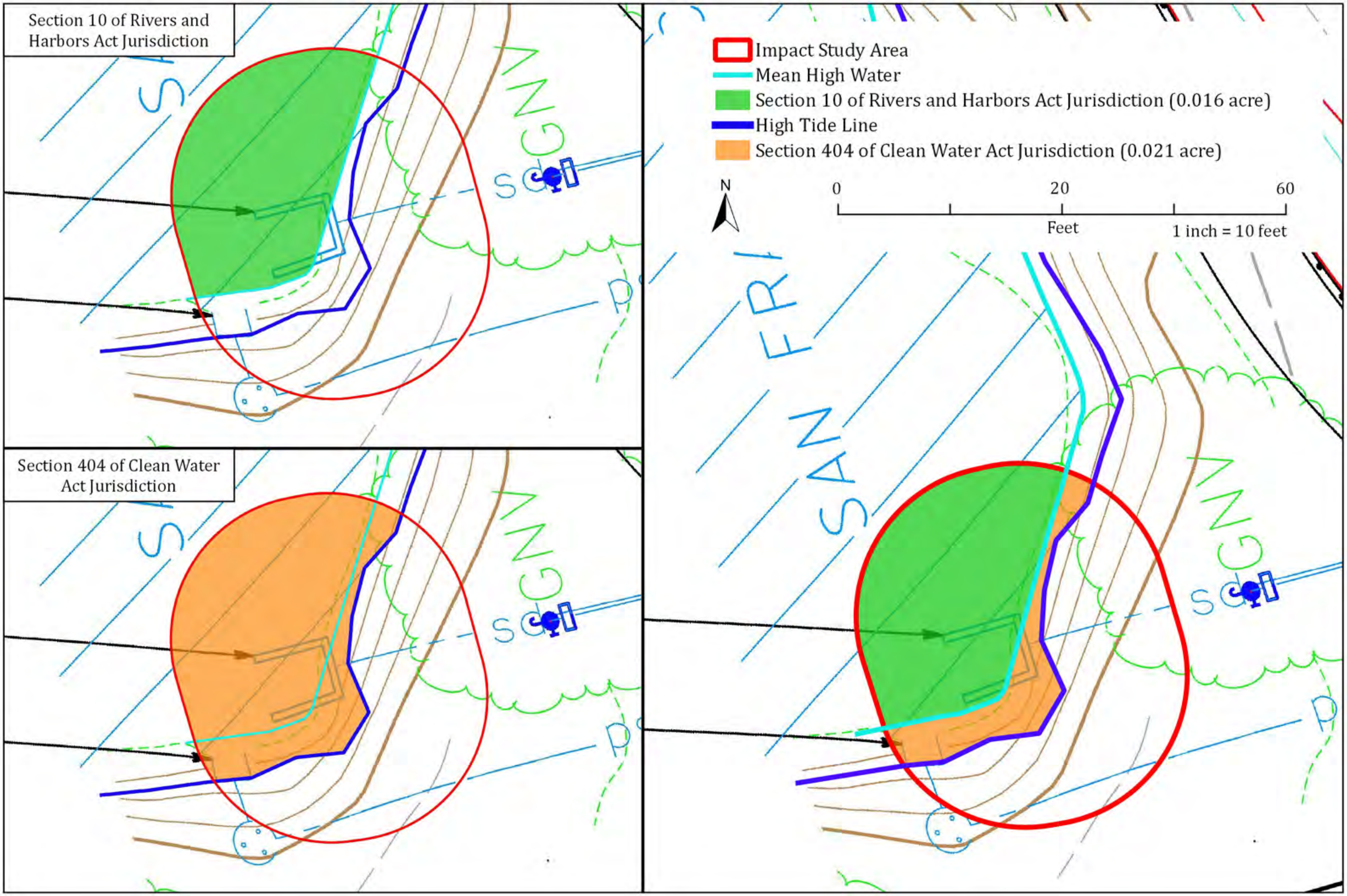
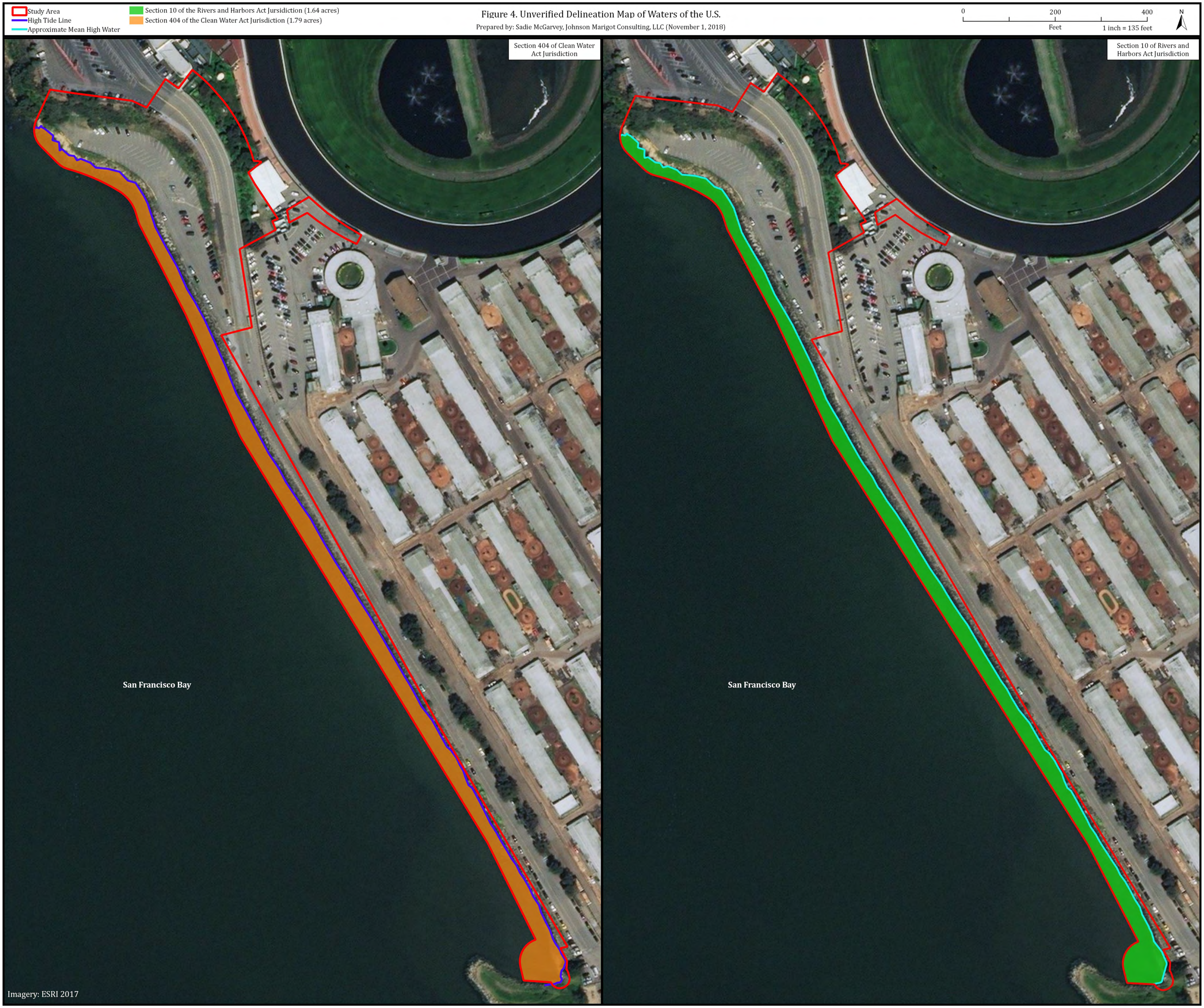


Figure 4

Unverified Delineaiton Map of Waters of the U.S

Figure 4. Unverified Delineation Map of Waters of the U.S.

Prepared by: Sadie McGarvey, Johnson Marigot Consulting, LLC (November 1, 2018)



APPENDIX A

USACE Verification (3/16/18)

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET, 16TH FLOOR
SAN FRANCISCO, CALIFORNIA 94103-1398

MAR 16 2018

Regulatory Division

Subject: File Number 2017-00207S

Ms. Jo Ann Cullom
California Department of Transportation, District 4
PO Box 236600
Oakland, California 94623

Dear Ms. Cullom:

This correspondence is in reference to your submittal of September 1, 2017, requesting an approved jurisdictional determination of the extent of navigable waters of the United States and waters of the United States occurring on a 59.5 acre site at the I-80 / Gillman Street Interchange in the City of Berkeley, Alameda County, California.

All proposed discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the United States; or below the high tide line in tidal waters of the United States; or within the lateral extent of wetlands adjacent to these waters, typically require Department of the Army authorization and the issuance of a permit under Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 et seq.). Waters of the United States generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the United States may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary; and certain ephemeral streams in the arid West.

All proposed structures and work, including excavation, dredging, and discharges of dredged or fill material, occurring below the plane of mean high water in tidal waters of the United States, in former diked baylands currently below mean high water, outside the limits of mean high water but affecting the navigable capacity of tidal waters or below the plane of ordinary high water in non-tidal waters designated as navigable waters of the United States, typically require Department of the Army authorization and the issuance of a permit under section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 et seq.). Navigable waters of the United States generally include all waters subject to the ebb and flow of the tide, and/or all waters presently used, or have been used in the past, or may be susceptible for future use to transport interstate or foreign commerce.

The enclosed delineation map titled "I-80 / Gillman Street Interchange, City of Berkeley, California," in two sheets, date certified February 6, 2018, reflects the absence of jurisdictional waters of the United States and navigable waters of the United States within the boundary area of the site, as defined by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. This approved jurisdictional determination is based on the current upland conditions of the site, as verified during a field investigation of July 18, 2017, a review of available digital photographic imagery, and a review of other data included in your submittal. This approved jurisdictional determination will expire in five years from the date of this letter unless new information or a change in field conditions warrants a revision to the delineation map prior to the expiration date. The basis for this approved jurisdictional determination is explained in the enclosed *Approved Jurisdictional Determination Form.*

The current absence of jurisdictional navigable waters of the United States and waters of the United States within the boundary area of the site does not obviate any requirement to obtain other Federal, State, or local approvals necessitated by law. Any impacts to federally-listed threatened or endangered species and/or designated critical habitat may be subject to regulation by the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under Section 10 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*). Sites located along the margins of San Francisco Bay may be subject to regulation by the San Francisco Bay Conservation and Development Commission under the McAteer-Petris Act of 1965, as amended (Public Resources Code § 66600 *et seq.*), or the Suisun Marsh Preservation Act of 1977, as amended (Public Resources Code §§ 29000-29612 *et seq.*). Therefore, you are urged to contact this agency directly to determine the need for other authorizations or permits.

You are advised that the approved jurisdictional determination may be appealed through the U.S. Army Corps of Engineers' Administrative Appeal Process, as described in 33 C.F.R. § 331 (65 Fed. Reg. 16,486; Mar. 28, 2000) and outlined in the enclosed flowchart and Notification of Administrative Appeal Options, Process, and Request for Appeal (NAO-RFA) Form. If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to this office for reconsideration of this decision. If you do not provide new information to this office, you may elect to submit a completed NAO-RFA Form to the Division Engineer to initiate the appeal process; the completed NAO-RFA Form must be submitted directly to the Appeal Review Officer at the address specified on the NAO-RFA Form. You will relinquish all rights to a review or an appeal unless this office or the Division Engineer receives new information or a completed NAO-RFA Form within 60 days of the date on the NAO-RFA Form. If you intend to accept the approved jurisdictional determination, you do not need to take any further action associated with the Administrative Appeal Process.

You may refer any questions on this matter to Janelle Leeson of my Regulatory staff by telephone at (415) 503-6773 or by e-mail at Janelle.D.Leeson@usace.army.mil. All correspondence should be addressed to the Regulatory Division, South Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website:
http://www.spn.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Gregory Brown
for
Rick M. Bottoms, Ph.D.
Chief, Regulatory Division

Enclosures

Copy Furnished (w/ encls):

Caltrans, District 4, Oakland, CA (Attn.: Mr. Matthew Rechs)

Copy Furnished (w/ encl 1 only):

CA RWQCB, Oakland, CA

Copy Furnished (w/o encls):

CA SWRCB, Sacramento, CA

DRY LAND APPROVED JURISDICTIONAL DETERMINATION FORM[1]
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): February 6, 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: San Francisco District, Interstate Route 80 / Gillman Street Interchange, 2017-00207S

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: CA County/parish/borough: Alameda City: Berkeley
Center coordinates of site (lat/long in degree decimal format): Lat. 37.878080 °, Long. -122.307242 °
Universal Transverse Mercator:
Name of nearest waterbody: SF Bay
Name of watershed or Hydrologic Unit Code (HUC): 18050002

☑ Check if map/diagram of review area is available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☑ Field Determination. Date(s): July 18, 2017

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

SECTION III: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☑ Office does not concur with data sheets/delineation report: Data sheets contain incorrect vegetation indicator status and therefore do not represent the correct determination for the presence of hydrophytic vegetation.
☐ Data sheets prepared by the Corps:
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☑ Photographs: ☑ Aerial (Name & Date):
☐ or ☑ Other (Name & Date):
☑ Previous determination(s). File no. and date of response letter: SPN-2007-400314
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☑ Other information (please specify): As-build designs

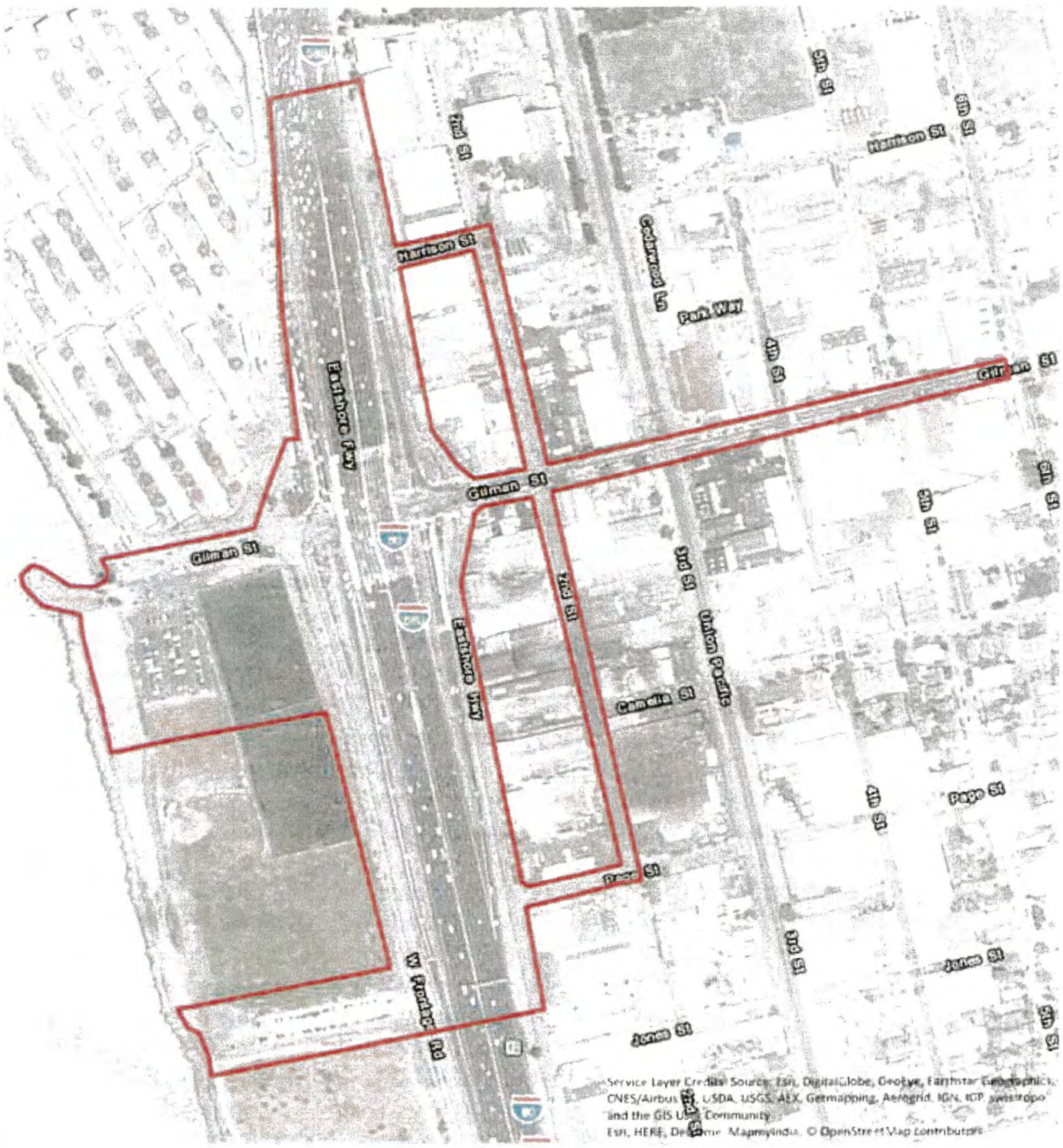
B. REQUIRED ADDITIONAL COMMENTS TO SUPPORT JD. EXPLAIN RATIONALE FOR DETERMINATION THAT THE REVIEW AREA ONLY INCLUDES DRY LAND: Swale 1:

Swale 1: Swale 1 is an approximate 300-foot long depression receiving runoff from a drainage outlet. Per design plans provided by the applicant, swale one is a constructed bio-swale for the purpose of stormwater treatment. Per the definition of Waters of the U.S. (40 CFR 230.3(s)), waste

[1] This form is for use only in recording approved JDs involving dry land. It extracts the relevant elements of the longer approved JD form in use since 2007 for aquatic areas and adds no new fields.

treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States. Furthermore, a preliminary jurisdictional determination (PJD) was completed for this portion of the project area, found in file SPN-2007-400314. The PJD verifies that the bio-swale was constructed in uplands.

Swale 2: Swale 2 is an approximate 560-foot long depression receiving runoff from the Bay Trail. The swale drains into two different drainage inlets, located near both ends of the swale. The inlets connect to the City storm drain system. A PJD was completed for this portion of the project area, found in file SPN-2007-400314. This PJD and design plans provided by the applicant depict that swale 2 is a ditch constructed entirely within uplands.



Study Area

Interstate 80/Gilman Street Interchange Improvement Project

City of Berkeley, Alameda County, California

Study Area

0 150 300 600 Feet

N

Figure 4. Study Area Map

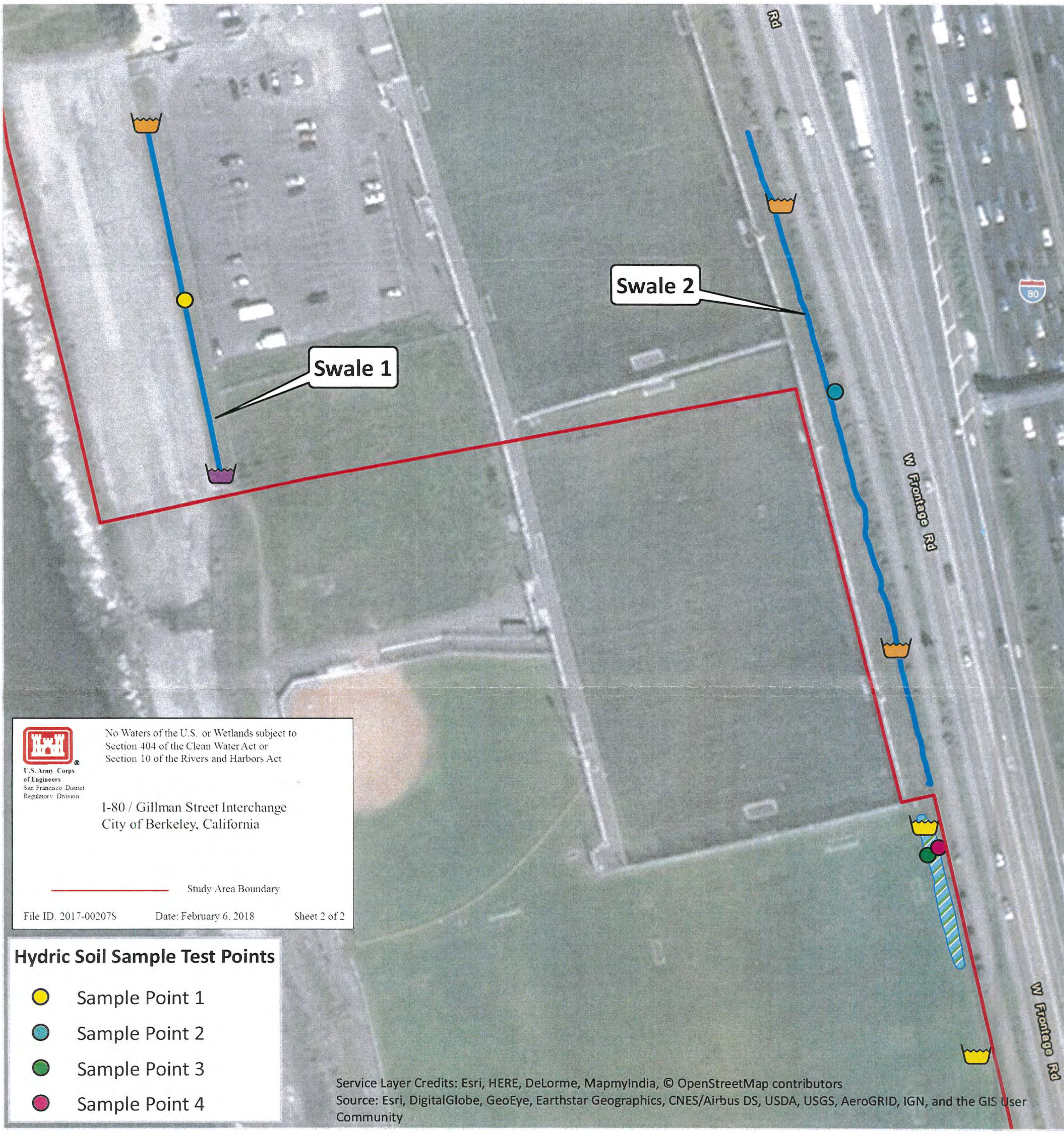
U.S. Army Corps of Engineers
San Francisco District
Regulatory Division

No Waters of the U.S. or Wetlands subject to Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act

I-80 / Gillman Street Interchange
City of Berkeley, California

Study Area Boundary

File ID. 2017-00207S Date: February 6, 2018 Sheet 1 of 2



Surveyed Features

Interstate 80/Gilman Street Interchange Improvement Project

City of Berkeley, Alameda County, California

BSA
Depression 1
Swale
Drainage Grate
Drainage inlet
Drainage outlet

N

0 50 100 200 Feet

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: California Department of Transportation		File Number: 2017-00207S	Date: 6 Feb 2018
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
Katerina Galacatos South Branch Chief, Regulatory Division San Francisco District, U.S. Army Corps of Engineers 1455 Market Street, 16th floor San Francisco, CA 94103-1398 Phone: (415) 503-6778 Email: Katerina.galacatos@usace.army.mil	Thomas J. Cavanaugh Administrative Appeal Review Officer, U.S. Army Corps of Engineers South Pacific Division 1455 Market Street, 2052B San Francisco, California 94103-1399 Phone: (415) 503-6574 Fax: (415) 503-6646 Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_______________________ Signature of appellant or agent.	Date:	Telephone number:

APPENDIX B

Arid Wetland Delineation Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gilman JD Addendum Study Area City/County: Berkeley/Albany, CA Sampling Date: 5/9/18

Applicant/Owner: Caltrans State: CA Sampling Point: 1

Investigator(s): Sadie McGarvey Section, Township, Range: S33 T1N R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5

Subregion (LRR): ______ Lat: 37.882751° Long: -122.312556° Datum: ______

Soil Map Unit Name: Urban Land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		✓
Hydric Soil Present?		
Wetland Hydrology Present?		✓
Is the Sampled Area within a Wetland?		✓

Remarks:

Representative upland data point

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Festuca perennis	60	X	FAC
2. Brassica nigra	20	X	NL
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	80		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	60	x 3 = 180
FACU species		x 4 =
UPL species	20	x 5 = 100
Column Totals:	80 (A)	280 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

Dominated by upland species.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes ____ No ____

Remarks:

No soil sample taken.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ______
Water Table Present? Yes ____ No ✓ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No surface hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gilman JD Addendum Study Area City/County: Berkeley/Albany, CA Sampling Date: 5/9/18

Applicant/Owner: Caltrans State: CA Sampling Point: 2

Investigator(s): Sadie McGarvey Section, Township, Range: S33 T1N R4W

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): ______ Lat: 37.882230° Long: -122.312188° Datum: ______

Soil Map Unit Name: Urban Land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? **Yes** ___ **No** ✓

Remarks:

Data point to determine wetland status. Located in compacted fill behind building.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Polypogon monspeliensis	50	X	FACW
2. Festuca perennis	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks:

Vegetation dominated by wetland species.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** ✓

Remarks:

Disturbed fill, primarily gravel, no redox present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ______

Water Table Present? Yes ______ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✓ Depth (inches): ______

Wetland Hydrology Present? **Yes** ______ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No surface hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gilman JD Addendum Study Area City/County: Berkeley/Albany, CA Sampling Date: 5/9/18

Applicant/Owner: Caltrans State: CA Sampling Point: 3

Investigator(s): Sadie McGarvey Section, Township, Range: S33 T1N R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10

Subregion (LRR): ______ Lat: 37.882713° Long: -122.313783° Datum: ______

Soil Map Unit Name: Urban Land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		✓
Hydric Soil Present?		
Wetland Hydrology Present?		✓

Is the Sampled Area within a Wetland? **Yes** ___ **No** ✓

Remarks:

Upland point on a slope adjacent to beach.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Hordeum murinum	40	X	FACU
2. Foeniculum vulgare	10		NL
3. Raphanus sativus	50	X	NL
4.			
5.			
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______ % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No ______

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ______

Water Table Present? Yes ______ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ______ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No surface hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Gilman JD Addendum Study Area City/County: Berkeley/Albany, CA Sampling Date: 5/9/18
Applicant/Owner: Caltrans State: CA Sampling Point: 4
Investigator(s): Sadie McGarvey Section, Township, Range: S33 T1N R4W
Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): none Slope (%): ______
Subregion (LRR): ______ Lat: 37.879040° Long: -122.303442° Datum: ______
Soil Map Unit Name: Urban Land NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		✓
Hydric Soil Present?		✓
Wetland Hydrology Present?		✓

Is the Sampled Area within a Wetland? **Yes** ____ **No** ✓

Remarks:

Representative data point for urban habitat.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______ % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** ✓

Remarks:

Sidewalk with landscaping strip adjacent.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No ✓

Remarks:

Sidewalk.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______

Water Table Present? Yes ______ No ______ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? Yes ______ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sidewalk.

Representative Site Photographs

Photo 1: Representative photograph taken from beach looking east-southeast toward the headwall.

4/11/18

Photo 2: Photograph taken looking west from foot of shoreline protection.

4/11/18

Photo 3: Photograph taken looking east toward outfall along Fleming Point (south of project boundary).

4/11/18