

San Jose Creek Bridge Replacement Project



Natural Environment Study

Route 217 at San Jose Creek Bridge

In Santa Barbara County near the City of Goleta

District 5-SB-217-PM 0.7 - 1.6

Project Number 0512000134 / EA 05-1C3600

October 2018




The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.


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Project Number 0512000134 / EA 05-1C3600

STATE OF CALIFORNIA
Department of Transportation

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Summary

Proposed Action

Caltrans proposes to replace the existing San Jose Creek Bridge (#51-0217) along State Route (SR)-217 from postmile 0.7 to 1.6 near the City of Goleta, approximately nine miles west of Santa Barbara, California. Reactive aggregate is deteriorating the concrete elements of the bridge, causing it to be structurally deficient, and bridge replacement has been recommended by Caltrans Structures Maintenance.

SR-217 is primarily a four-lane freeway with standard 12-foot wide lanes, standard 10-foot wide inside and outside shoulders, and a continuous single concrete median barrier. It changes to a two-lane freeway just west of the bridge. There also is an 8-foot wide parallel bicycle/pedestrian path on the south side of the freeway within the project limits, separated from freeway traffic by a concrete barrier and fence. The existing four-lane bridge has seven spans, a reinforced concrete slab deck, and 66 supporting columns. The proposed replacement bridge would maintain the existing traffic lanes and provide safety improvements, including standard bridge rails with bicycle rails and standard shoulders. The proposed work also includes reconstructing the existing roadway approaches to the bridge, replacing the bicycle/pedestrian path, replacing existing guardrails and end treatments, relocating existing conflicting utilities, and minor drainage work such as new dikes and over-side drains.

The proposed project originally had three “build” alternatives, two of which were eliminated from consideration due to environmental impacts and cost. The currently proposed build alternative has two design variations, one that replaces the bridge in-kind (Design Variation 1) and one that provides elements for future jacking and raising of the structure to accommodate future sea level rise (Design Variation 2). Both design variations consist of replacing the existing bridge with a two-span precast, pre-stressed, wide flange, girder bridge that will be slightly wider than the existing structure to upgrade the bicycle/pedestrian path to a standard width (10-feet). The path will remain on the south side of the freeway. Two retaining walls will be constructed as extensions of the proposed wingwalls along the bicycle/pedestrian path to minimize the need for fill material into San Jose Creek. The design profile will ensure that the lowest soffit elevation meets the minimum elevation of 12 feet, which requires reconstructing the roadway approaches. The main differences with Design Variation 2 is that the bridge structure will be built at a higher elevation than the existing bridge and it will contain certain features to raise the structure approximately 33 inches in the future to accommodate sea level rise.

The proposed project will be constructed in two stages. During Stage 1, traffic will be diverted to the north side of the bridge, and the south side of the existing bridge will be demolished and replaced. Prior to initiating work within the active water channel, the contractor will be required to install a temporary stream diversion and dewater the work area. All work within the active water channel (including installing a temporary work platform, constructing the new columns, removing the existing columns, and removing the work platform) must be performed within an isolated and dewatered work area, and

must be performed during the summer in-stream work season (June 15 and October 31 in any given year, or as otherwise directed by the regulatory agencies).

For each stage of bridge construction, a temporary protective cover will be constructed under the bridge and over the live stream to protect aquatic resources during demolition of the bridge deck. If feasible, the existing columns will be removed completely, or removed to 3 feet below the finished grade if there is no conflict with the new columns. During each stage of construction, four of the Type II cast-in-drilled-hole (CIDH) concrete piles will be installed to a depth of approximately 100 feet below ground along the middle pier. Even though the work area will be isolated and de-watered, steel casings will be installed prior to forming the concrete piles to ensure a dry environment. Caltrans anticipates that the steel casings can be installed with a vibratory or rotating/oscillating method, and an impact pile driver will not be needed. The piles for the end abutments will be constructed in a similar manner as the middle pier, except the abutments will be installed outside of the existing abutments. As such, the work performed well outside of the stream channel.

The new bridge deck will be constructed after the middle pier and abutment work is completed. All temporary materials in the stream channel, including the temporary work platform and the temporary stream diversion, will be removed after the portions of bridge construction that require work within the channel are complete, and prior to the end of the in-stream work season. For the roadway approaches, the abutments will be backfilled and 30-ft sections of the roadway, approaching and leaving the bridge, will be constructed out of reinforced concrete. The approach slabs and bridge rails will then be formed with reinforcing steel, followed by the placement of concrete.

Stage 2 construction will most likely be performed the following year, during the summer in-stream work season. When Stage 2 construction starts, two-way traffic will be shifted away from the existing northbound lanes to the newly constructed half of the bridge. The other portion of the original bridge supporting the former northbound lanes will then be demolished, and the second half of the new bridge constructed as described above. After bridge construction, the slopes and streambed will be graded to finished elevations, to approximate pre-construction conditions as close as feasible. Finally, road striping, metal beam guard rail, and other ancillary activities will be constructed.

Potential Project Impacts to Biological Resources

The California Natural Diversity Database (CNDDB) was queried to obtain a list of special status species known to occur in the project vicinity. The most recent official species lists from the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) were obtained on July 3, 2018. Field studies included botanical surveys for sensitive plant species, general reconnaissance-level wildlife surveys, and delineation of wetlands and waters under the jurisdiction of the U. S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW) and California Coastal Commission (CCC) (administered by Santa Barbara County at the project area).

Impacts to protected habitats and jurisdictional area within the project's Area of Potential Impact (API) have been quantified assuming the maximum amount of disturbance/impact associated with construction of the project (including the proposed work area, bridge structures at ground or streambed level, areas of cut and fill, staging, access, and temporary dewatering), as summarized below:

Protected Habitat/Jurisdictional Area	Alternative 1 (both Design Variations)	
	Permanent Impacts(ac)	Temporary Impacts (ac)
Wetlands (Pickleweed Mats/Southern Coastal Salt Marsh) ¹	0.038	0.142
Perennial Stream ² , Steelhead and Tidewater Goby Critical Habitat, and Pacific Coast Groundfish and Coastal Pelagic EFH	0	0.711
Ephemeral Drainage ³	0.014	0.028
Riparian ⁴	0.020	0.050
Non-Riparian Streambank ⁵	0.131	0.198
Total USACE Jurisdiction ⁶	0.038	0.853
Total RWQCB Jurisdiction ⁷	0.203	1.129
Total CDFW Jurisdiction ⁸	0.165	0.987
Total CCC ESHAs ⁹	0.057	0.903
¹ The only type of 3-parameter wetlands in the BSA. ² Below the OHWM. ³ Comprised of roadside ditches. ⁴ Comprised of Quailbush Scrub and Arroyo Willow Thickets plant communities. ⁵ Between the OHWM and top of bank, excluding Riparian habitats. ⁶ Includes Wetlands and Other Waters (=Perennial Stream). ⁷ Includes Wetlands, Perennial Stream, Ephemeral Drainage, Riparian and Unvegetated Streambank, some of which overlap with USACE jurisdiction. ⁸ Includes Perennial Stream, Ephemeral Drainage, Riparian and Unvegetated Streambank, some of which overlap with USACE jurisdiction. ⁹ Includes Wetlands (Pickleweed Mat/Southern Coastal Saltmarsh), Perennial Stream, and 1- parameter wetlands in Riparian habitats (Quailbush Scrub and Arroyo Willow Thickets).		

A minor amount of permanent impacts to protected habitats and jurisdictional areas would result from the installation of new pier and abutments, and reconstructing the roadway and bicycle/pedestrian path. The project will result in insignificant (as defined by the Federal Endangered Species Act [FESA]) long-term effects to steelhead and tidewater goby Critical Habitat, and Pacific Coast Groundfish and Coastal Pelagic Species Essential Fish Habitat (EFH), because the new columns will result in a very minor increase in area of man-made structures in the stream. The new columns will be located near the bank and a greater portion of the active channel will be free of obstructions. Temporary impacts to protected habitats and jurisdictional waters would occur throughout the overall work area resulting from temporary diversion and dewatering, vegetation trimming, falsework, and equipment access and staging. Sources of impacts would be primarily from the use of construction equipment and associated worker foot-traffic.

Environmentally Sensitive Area (ESA) fencing will be installed along the maximum disturbance limits to minimize disturbance to habitats/vegetation. No wildlife connectivity or fish passage impacts are anticipated. Measures will be implemented to avoid/minimize the spread of invasive species throughout the project area.

The FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, Southern California Distinct Population Segment (DPS) of steelhead, Southern California steelhead critical habitat, tidewater goby, and tidewater goby critical habitat. The basis for this determination is that steelhead and tidewater goby presence has been inferred (based on the best available information) and there would be a potential for take of the species during diversion and dewatering activities, capture, and relocation. These activities could also result in a temporary disruption of service for steelhead and tidewater goby critical habitat, but the extent and effects of this are estimated to be minor and restricted to two construction seasons during the driest months of the year (June to October). Formal consultation with NMFS and USFWS will be required.

No special-status plant species were observed during appropriately-timed floristic surveys within the study area, and no special-status plant species are anticipated to be impacted by the proposed project. As such, the FESA Section 7 effects determination is that the proposed project will have no effect on the following federally listed plant taxa: marsh sandwort, salt marsh bird's-beak, Contra Costa goldfields, and Gambel's watercress. There will be no impacts to critical habitat for any of these federally listed plant taxa.

Because of a lack of suitable habitat, the FESA Section 7 effects determination is that the proposed project will have no effect on the following federally listed animal taxa: vernal pool fairy shrimp, black abalone, white abalone, California red-legged frog, federally-listed sea turtles, marbled murrelet, western snowy plover, southwestern willow flycatcher, light-footed clapper rail, California least tern, least Bell's vireo, Guadalupe fur seal, southern sea otter, or any other federally listed marine mammal. There will be no impacts to federally designated critical habitat for any of these federally listed animal taxa.

EFH for Pacific Coast Groundfish and Coastal Pelagic Species is present in the project area. The project is not expected to result in adverse effects to EFH due to the small work area relative to PCG and CPS EFH in Goleta Slough, and with the implementation of avoidance and minimization. EFH consultation with NMFS will not be required.

Eight other special status animal species (i.e., listed by the California Endangered Species Act [CESA], California Species of Special Concern (SSC), species on the CNDDB or California Special Animals List, and native migratory birds) have the potential to be present in the project area during construction activities due to historic or recent records and presence of suitable habitat conditions in the project area, including obscure bumble bee, Crotch bumble bee, western pond turtle, Cooper's hawk, grasshopper sparrow, white-tailed kite, yellow-breasted chat, Belding's savannah sparrow and yellow warbler. With the implementation of avoidance and minimization measures, the proposed project

is not expected to result in take of any state-listed species as defined by CESA, removal of any special status species, or conflicts with the Migratory Bird Treaty Act. No California Fish and Game Code Section 2081 Incidental Take Permit with CDFW will be required.

As summarized above, wetlands, other waters, and riparian areas under the jurisdiction of USACE, RWQCB, CDFW, and CCC will be impacted by the proposed project. The proposed project will require a Clean Water Act (CWA) Section 404 permit from the USACE, a CWA Section 401 Water Quality Certification from the RWQCB, a California Fish and Game Code Section 1602 Streambed Alteration Agreement from CDFW, and a Coastal Development Permit or waiver from Santa Barbara County on behalf of the CCC.

The impacts to jurisdictional areas associated with San Jose Creek would be of a relatively small scale. Compensatory mitigation is proposed at a 1:1 ratio (acreage) for temporary impacts and at a 3:1 ratio (acreage) for permanent impacts to riparian and salt marsh vegetation via restoration (re-establishment). Mitigation for permanent impacts to wetland, riparian and non-vegetated streambank is expected to be completed onsite because there is ample opportunity to improve streambank and salt marsh habitat in the area, by replacing non-native and invasive species with native riparian species. In particular, the area currently mapped as Myoporum Groves and Iceplant Mats vegetation communities that are dominated by invasive species are within and adjacent to the streambank and salt marsh and could be revegetated with native species. However, establishing salt marsh vegetation can be challenging, especially in marginal hydrologic settings as this. Alternatively, Caltrans could partner with a governmental or non-profit organization in the area already actively restoring salt marsh habitats in the region.

To mitigate for temporary impacts, it is anticipated that restoration plantings will be onsite and in-kind, utilizing locally present/native species. Mitigation plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan which will be included in the final Mitigation and Monitoring Plan, developed by the Caltrans' biologist. It will include planting specifications and grading plans to ensure survival of planted vegetation and re-establishment of functions and values.

Although this project is within a navigable waterway, the U. S. Coast Guard has determined that the project conforms to Advance Approval criteria in 33 CFR 114.70 as listed as a Categorical Exclusion in their National Environmental Policy Act implementing regulations, and no further review is required. However, photographs and as-built drawings are required upon completion of the project.

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List of Abbreviated Terms

Abbreviation	Term
%	Percent
ac	Acre or Acres
API	Area of Potential Impact
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CIDH	Cast-in-drilled-hole
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPS	Coastal Pelagic Species
CFR	Code of Federal Regulations
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
ESHA	Environmentally Sensitive Habitat Area
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
ft	Foot or Feet
HAPC	Habitat Areas of Particular Concern
IPaC	Information, Planning, and Conservation System
m	meters
MMP	Mitigation and Monitoring Plan
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWP	Nationwide Permit
° F	Degrees Fahrenheit
OHWM	Ordinary high water mark
PCG	Pacific Coast Groundfish
PM	Postmile
RSA	Resource Study Area
RWQCB	Regional Water Quality Control Board
SBC	Santa Barbara County
SR	State Route
SSC	Species of Special Concern
UCSB	University of California Santa Barbara
USACE	U. S. Army Corps of Engineers
USFWS	U. S. Fish and Wildlife Service
WDR	Waste Discharge Requirement (permit)

Chapter 1. Introduction

This Natural Environment Study (NES) provides technical information and reviews the project to assess its effects on special-status species. The NES has been prepared to provide information for the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) environmental review processes, in accordance with California Department of Transportation (Caltrans) regulation, policy, and guidance. Federal Highway Administration (FHWA) is a source of funding for the project.

1.1. Project History

Caltrans proposes to replace the existing San Jose Creek Bridge (#51-0217) along State Route (SR)-217 from postmile (PM) 0.7 to PM 1.6 near the City of Goleta, approximately nine miles west of Santa Barbara, California (see Figure 1). The proposed project is located just east of the main campus of University of California Santa Barbara (UCSB). SR-217 provides connectivity between SR-101 and UCSB, and access to the nearby Santa Barbara Regional Airport and the Goleta Beach County Park. SR-217 is primarily a four-lane freeway with 12-foot (ft) wide lanes, 10-ft shoulders, and a 20-ft median with a continuous, single concrete median barrier. The signed speed is 65 miles per hour. SR-217 transitions from four to two lanes at the west end of the San Jose Creek Bridge, within the project limits.

The existing four-lane bridge structure has seven spans and a reinforced concrete slab deck. A Caltrans Structures Maintenance and Investigations Peer Review was convened on January 12, 2010, to discuss whether to reaffirm a recommendation to replace the bridge or pursue repair strategies to ensure the safety and reliability of the structure. Past inspection of the structure has documented a long history of concrete cracking and deterioration due to Alkali-Silica Reactivity or reactive aggregate, which is a widespread problem affecting Portland cement concrete pavements and structures. It occurs when silica in the aggregate and alkali in the cement react in the presence of water. The result is a chemical reaction that causes concrete to crack and lose its strength. The most recent routine inspection of this structure in December 2009 noted delamination in the deck and soffit efflorescence. The bridge has been determined to be structurally deficient.

The purpose of the proposed project is to maintain safe, multi-modal continuity across San Jose Creek for travelers along SR-217 within Caltrans' design standards. The project is needed because reactive aggregate is deteriorating the concrete elements of the existing bridge, causing it to be structurally deficient. Bridge replacement has been recommended by Caltrans Structures Maintenance.

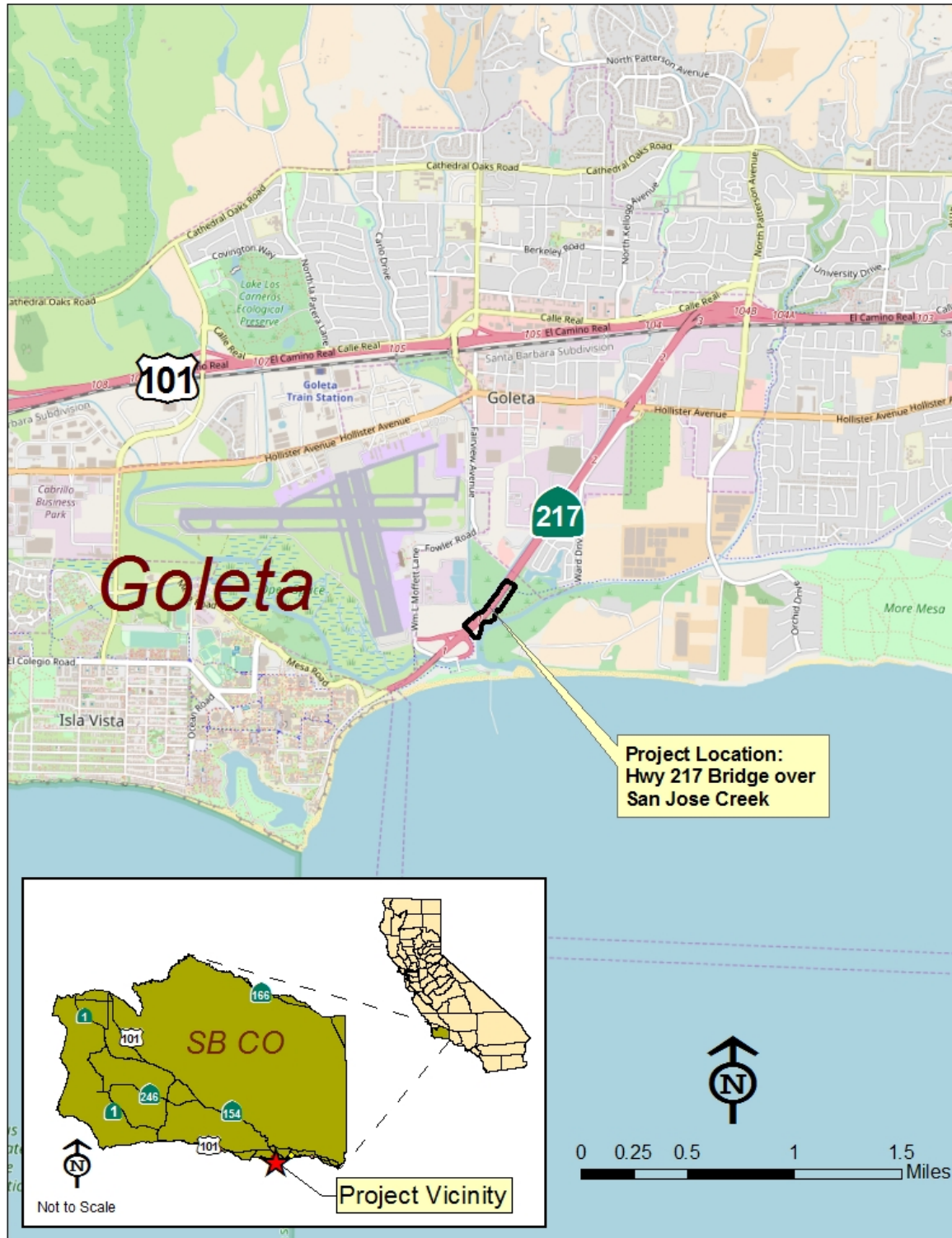


Figure 1. Project location map.

1.2. Project Description

SR-217 is primarily a four-lane freeway with standard 12-foot wide lanes, standard 10-foot wide inside and outside shoulders, and a continuous single concrete median barrier. It changes to a two-lane freeway just west of the bridge. There also is an 8-foot wide parallel bicycle/pedestrian path on the south side of the freeway within the project limits, separated from freeway traffic by a concrete barrier and fence. The proposed new bridge would maintain the existing two northbound and two southbound traffic lanes and provide safety improvements, including standard bridge rails with bicycle rails and standard shoulders. The proposed work also includes reconstructing the existing roadway approaches to the bridge, replacing bicycle/pedestrian path, replacing existing guardrails and end treatments, relocating existing conflicting utilities, and minor drainage work such as new dikes and over-side drains.

1.2.1. Project Alternatives

Three build alternatives were originally considered for this project, all of which can be described as “precast” bridges, whereby the girders will be precast but all other elements of the bridge (including the deck) will be “cast-in-place.” A former build alternative consisted of replacing the existing bridge with a precast, pre-stressed, three-span “I” girder bridge. Due to the number of new piles/columns that will be required to be installed in the streambed, this alternative was eliminated from consideration in favor of a two-span alternative. The remaining “build” alternative has a single central pier, labeled “Pier 2,” located between Abutment 1 (west side of the bridge) and Abutment 3 (east side of the bridge). This alternative has two design variations, one that replaces the bridge in-kind (Design Variation 1) and one that provides elements for future jacking and raising of the structure to accommodate future sea level rise (Design Variation 2). Preliminary project plans are included in Appendix A.

Design Variation 2, the jackable variation, is the preferred option at this time. However, this variation does not involve raising the structure at this time, because that would require raising the roadway approaches, which would entail a considerably larger construction footprint than is feasible at this time. The reason that a larger construction footprint was rejected was because: 1) raising the roadbed approach to the east would require constructing a 1,000-ft long retaining wall along the streambank of San Jose Creek, and 2) raising the roadbed approach to the west would require re-designing the cloverleaf interchange and the intersection with Moffett Road, which was out of scope for this project and would result in substantially greater impacts to wetlands and adjacent properties. A project that involves raising the structure and re-designing the road approaches will be addressed in the future when the structure needs to be raised for sea level rise.

Caltrans attempts to use Accelerated Bridge Construction whenever feasible, defined by Caltrans as “any type of bridge construction that utilizes the most efficient combination of innovative planning, design, materials and construction methods to significantly reduce construction related impacts by reducing the number of onsite construction days and/or minimizing traffic disruption”. A free span design, which would be considered an Accelerated Bridge Construction design, is not feasible for the project, as it would require

a structure depth of 12.75 ft for a precast girder option and this would result in a much lower soffit elevation than the proposed design and not enough hydraulic capacity. As proposed, the two-span, precast, pre-stressed option provides a more reasonable structure depth, minimizes onsite construction days, and will have less environmental impacts to the stream, wetlands, and other protected habitats as a result of a smaller overall construction footprint.

1.2.1.1. ALTERNATIVE 1, DESIGN VARIATION 1: REPLACE EXISTING BRIDGE (IN-KIND)

Design Variation 1 will consist of replacing the existing bridge with a two-span precast, pre-stressed, wide flange, girder bridge. Two retaining walls would be constructed as extensions of the proposed wingwalls along the bicycle/pedestrian path to minimize the need for fill material into San Jose Creek. The design profile will ensure that the lowest soffit elevation meets the minimum elevation of 12 ft, which requires reconstructing the roadway approaches.

The retaining wall along the bicycle path will be approximately 253-ft long located along the south side of the highway, starting approximately 60 ft from the waterway. Although still in design, the wall may be supported by pre-cast concrete piles, each of which may be approximately 12-16 inches in diameter. The piers and wing walls will be supported by Type II cast-in-drilled-hole (CIDH) piles.

The existing bridge is 192.4 ft long, 94.3 ft wide, and 1.5 ft deep. It is currently supported by six piers, with a total of eleven 15-inch diameter, 12.85 ft high columns per pier (66 total columns). A total of 48 of these columns are within the ordinary high water mark (OHWM), resulting in a total footprint of 59 square feet (ft²) within the OHWM. The existing abutments are located behind the streambanks. The proposed bridge will be approximately 213.6 ft long, 105 ft wide, and 4.75 ft deep. The east abutment will be located in approximately the same location as the existing east abutment, while the west abutment will be about 10 ft to the west. The new abutments will also be located outside streambanks.

The existing six piers (66 columns) will be removed and replaced with one middle pier supported by eight Type II cast-in-drilled-hole (CIDH) piles. As in the existing condition, the center of the bridge and therefore the middle pier will be located near the west bank (see preliminary project plans), and within the OHWM. Each CIDH pile will be 42-inches diameter above ground and 66-inches below ground, resulting in a total footprint of 77 ft² above ground within the OHWM. The steel casing around the piles will be 66-inches in diameter and only below the ground. A concrete bent cap will be formed at the top of the columns, attached to the bridge deck well above the OHWM. Type II CIDH piles (24-inch diameter) will also be used at each of the abutments, which are located behind the existing stream banks, not within the OHWM (see preliminary project plans).

The proposed design accommodates the 100-year flood event, which will have a surface water elevation between 10 and 11 ft. The lowest soffit elevation of the proposed replacement structure is at an elevation of 12 ft. The proposed design reduces the number of bents in the streambed by increasing the depth of the superstructure from 1.5 ft

(existing) to 4.47 ft (proposed). This reduces the number of spans from ten to two. Despite the higher profile, this design variation will not address future sea level rise.

1.2.1.2. ALTERNATIVE 1, DESIGN VARIATION 2: REPLACE EXISTING BRIDGE (JACKABLE)

As described above, the design for the bridge is the same both design variations. The only difference with this variation is that the bridge structure will be built at a higher elevation than the existing bridge, and it will contain certain features to raise the structure approximately 33 inches in the future to accommodate sea level rise. Additional rebar with couplers and pins will be installed to allow for extension of columns, whereby the superstructure (girders and deck) could be raised by jacking at some point in the future. As described above, the bridge will not be raised at this time under this design variation.

1.2.1.3. ALTERNATIVE 2: NO-BUILD

The no-build alternative will maintain the status quo and leave the existing bridge in place with no modifications. This alternative will not meet the purpose and need because the existing bridge is structurally deficient, and without correction could lead to bridge failure.

1.2.2. Construction Stages

1.2.2.1. STAGE 1 CONSTRUCTION

Stage 1 of project construction involves removing the south side of the existing bridge and constructing the south half of the new bridge. Two-way traffic will be shifted to the existing southbound lanes with appropriate traffic controls. A temporary bicycle/pedestrian path will also be provided. Caltrans structures engineer has recommended pile driving for the retaining wall along the bicycle/pedestrian path. However, the pile driving will not be located within, or even adjacent to the water.

The contractor will be required to keep demolition debris and construction materials from entering the active stream. A temporary working platform or trestle may be used for bridge construction. If a trestle is required, some of the piles will need to be installed in the water channel and some on the adjacent shore. Dewatering may not be feasible due to the amount of water, tight construction schedule to complete over- and in-stream components of bridge construction during the appropriate season for steelhead (June 1 to October 31), and anticipated locations of the piles through the middle of the channel. Based on site conditions, Caltrans anticipate that the piles will be comprised of steel pipe up to 12-inches in diameter. The piles can be installed by oscillating or vibrating, but final proofing will most likely be required, using an impact pile driver and up to 200 strikes per day. Demolished material will be completely removed from the project site.

Prior removing the existing columns and constructing the CIDH piles within the active water channel (the middle pier, or “Pier 2”), the contractor will be required to install a temporary stream diversion and dewater the work area, as described in Section 1.2.3. A crane for lifting and installing the casings and a vibratory “drilling” rig will most likely be positioned on the bank adjacent to Pier 2 or in the isolated work area.

If feasible, the existing columns will be removed completely, or removed to 3 ft below the finished grade if there is no conflict with the new columns. The existing columns will be removed either before or after installing the new columns, as determined by the contractor. During Stage 1 construction, four of the CIDH piles will be installed along the middle pier to support the first half of the new bridge. For the foundation, each pile will be installed to a depth of approximately 100 ft below ground. Even though the work area will be isolated and de-watered, steel casings are necessary to ensure a dry environment for forming the concrete piles, preventing wet concrete from leaking into the stream channel. Caltrans anticipates that the steel casings will be installed with a vibratory or rotating/oscillating method, and an impact pile driver will not be needed. Design tip elevations for casings and CIDH foundations depend on the loads, diameter of the pile, and geotechnical site conditions.

Drilling fluid/slurry is pumped into the casing to evacuate the water. Drilling fluid will consist of water mixed with either mineral (usually bentonite powder) or polymer admixtures that make the fluid more viscous and slightly denser than water. In order to maintain an outward gradient and higher fluid elevation than the stream/water table, the casing will extend several ft above the water table (typically at least 5 ft). Once each casing is in proper position a drill rig working from the creek bed will first remove the soil content of the casing, and then construct the rock socket (lowest portion of the pile beneath the casing). Drill spoils removed will be collected and either reincorporated into embankment fills, or transported to an approved, off-site disposal facility. Once the rock socket excavation is completed, a crane will place a reinforcing steel cage into the pile.

To create the CIDH pile, the casing will then be backfilled with concrete, up to a specified elevation of a construction joint within the permanent steel casing. This lower portion of the pile will serve as the base to construct the column/upper pile portion. The concrete pour will be accomplished with a concrete pump truck positioned on the roadway or adjacent embankment (area east of the bridge), then allowed to cure to obtain adequate compression strength (typically 30 days). If the casings are permanent, the top will be cut flush with the top of the piles. If temporary, they will either be removed or saw cut to a minimum depth of 3 ft below finished grade around the concrete piles.

After the CIDH piles and columns are been constructed, the concrete bent cap will be formed, most likely utilizing wood falsework. Fresh concrete will be prevented from entering the stream with the protective cover and temporary work platform described above, or other protective measures. The CIDH piles for the new abutments will be constructed in a similar manner as the middle pier, as described above, except the abutments will be installed outside of the existing abutments. As such, the work performed will be outside of the stream channel. It is assumed that casings will still be needed in case of ground water entering the work area.

Span 1 and Span 2 precast girders will be installed after the piers are constructed. If the jackable design option is selected, additional rebar with couplers and pins will be installed to allow for future extension of columns. Deck forms will be placed between the girders followed by deck rebar and concrete placement. Once the deck concrete has

reached the specified concrete strength, the deck forms will be removed. All temporary materials in the stream channel, including the temporary work platform and the temporary stream diversion, will be removed after the portions of Stage 1 bridge construction that require work within the channel are complete, and prior to the end of the in-stream work season.

For the roadway approaches, the abutments will be backfilled and 30-ft sections of the roadway approaching and leaving the bridge will be constructed out of reinforced concrete. The approach slabs and bridge rails will then be formed, with reinforcing steel placed followed by the placement of concrete. Expansion joint seals that allow for bridge movement will be placed between the backwall and the approach slab.

1.2.2.2. STAGE 2 CONSTRUCTION

Stage 2 construction involves removing the second half (north side) of existing bridge and constructing the north side of new bridge. Stage 2 construction will most likely be performed the following year during the summer in-stream work season, described below. When Stage 2 construction starts, two-way traffic will be shifted away from the existing southbound lanes to the newly constructed south half of the bridge. The north side of the original bridge will then be demolished, and the second half of the new bridge constructed using similar methodology as previously described for Stage 1.

After bridge construction, the slopes and streambed will be graded to finished elevations, to approximate pre-construction conditions as close as feasible. The bridge deck and roadway will be subjected to profilograph testing to measure surface roughness and then smoothed as needed. Finally, road striping, metal beam guard rail, and other ancillary activities will be constructed.

1.2.3. Diversion And Dewatering

Except for the temporary work trestle, stream diversion and/or dewatering will be required for all work in the active stream channel, including removing existing columns and constructing Pier 2 CIDH piles. Diversion and dewatering will be timed to occur between June 1 and October 31 in any given year (or as otherwise directed by the regulatory agencies). Although the precise diversion/dewatering methodology is typically determined by the contractor prior to construction and vetted by regulatory agencies during the permitting process, the following information presents a method commonly used in similar settings.

The middle pier will be located very close the east edge of the active stream. As such, a full stream-width diversion is not expected to be needed. Instead, the contractor will most likely build a partial diversion to move the stream flow around just this side of the stream and the middle pier. A cofferdam would be constructed of metal sheet piling, held in place with posts or gravel behind the sheets. This may cause the wetted stream to be pushed about 10 ft towards the east abutment (Abutment 1) to create some working room with temporary gravel backfill in this area. The cofferdam may start about 50 ft upstream of the most upstream column and extend to about 50 ft downstream of the most downstream column. Caltrans will require that the contractor install the posts or sheets by a vibratory or rotating/oscillating method, and not pile driving.

If the stream diversion and dewatering does not completely dry the work area, steel casings will be used around each pile to prevent wet concrete from leaking into the stream, as described in Section 1.2.2.1. Fish and other aquatic species stranded in dewatered areas will be relocated to suitable habitat. The temporary stream diversion materials will be removed by end of the in-stream work season and reinstalled the following year after the start of the in-stream work season, for each construction year as necessary (although only two construction years are anticipated).

Removal of nuisance water within the work site will be accomplished by pumping the water with low horsepower pumps and hoses. The pumps, if used, will have protective screens at intake ends to prevent fish and other aquatic species from entering the pumps. To capture water born sediment, water will be pumped to a temporary sediment basin, adjacent uplands, or a Baker tank system will be used for settlement/filtration. Dewatering discharge points will be placed downstream of the dewatered area at locations where the discharge will not result in erosion or scour. If a sediment basin is used, it will be maintained as necessary to ensure adequate functionality.

Upon completion of instream work, the contractor will remove all equipment and infrastructure associated with dewatering in a manner that will minimize adverse impacts to water quality and to ensure that stream contours are returned to pre-construction conditions, or as close as possible.

1.2.4. Site Preparations and Construction Access

Environmentally Sensitive Area (ESA) fencing will be installed throughout areas of the project to limit construction activities and protect habitats of concern. Specifications for the installation of ESA fencing and silt fencing shall be included in the Construction Contract for this project and also identified on the project plans. ESAs will also be delineated in the field and will be approved by Caltrans' environmental division prior to beginning any construction activities, including equipment storage.

Caltrans has identified a location for construction staging and storage to the south of SR-217 and east of the stream, in an area that has been previously disturbed and is regularly used by Santa Barbara County (SBC) Flood Control District for access to streams in the project vicinity (Padre Associates 2010).

Prior to bridge construction activities the contractor will need to clear and grub to provide access into the stream channel on either side of the bridge. Temporary vegetation removal to accommodate access and construction will be minimized to the extent feasible. Access to the streambed for constructing the middle pier will be from the east bank which has an existing gradual slope from the bridge abutment to the water and is closer to the work area for the middle pier. However, access for demolition of the existing and construction of the new abutments will be from the adjacent roadway, not the streambed. Temporary access ramps, if needed, will be graded approximately 50 ft wide to provide access. The contractor may have to shore and cut the slope(s) of the access ramp(s), and add gravel substrate for stability and safety, which will be required to be removed after construction.

1.2.5. Types of Equipment

Trucks, cranes, bulldozers, backhoes, forklifts, compactors, a vibratory pile-installation rig, clamshells, excavators, hoe rams, jackhammers, compressors, man lifts, scrapers, paver grinders, pavers, and any other equipment that becomes necessary in the course of construction will be used.

1.2.6. Construction Work Schedule

The construction schedule is based on preliminary estimates and is subject to change. For both design variations, construction is projected to start in approximately March 2022, require approximately 450 work days, with completion of construction by approximately November 2023. As described above, the staged construction will most likely require two years to perform the various activities within the waterway during the in-stream work season.

Chapter 2. Study Methods

2.1. Regulatory Requirements

2.1.1. Federal Policies And Regulations

2.1.1.1. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

NEPA directs "a systematic, interdisciplinary approach" to planning and decision making and requires environmental statements for "major federal actions significantly affecting the quality of the human environment." Implementing regulations by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] Parts 1500-1508) requires federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. Federal agencies are directed to emphasize significant environmental issues in project planning and to integrate impact studies required by other environmental laws and Executive Orders into the NEPA process.

2.1.1.2. CLEAN WATER ACT (CWA) SECTION 404

The U.S. Army Corps of Engineers (USACE) is responsible for the issuance of permits for the placement of dredged or fill material into "waters of the United States" pursuant to Section 404 of the CWA (33 United States Code 1344). Federal jurisdictional waters of the U. S. were re-defined in a 2015 Final Rule by the USACE and Environmental Protection Agency (EPA) (USACE and EPA 2015). However, an Executive Order in 2017 repealed that definition and is currently being re-evaluated (82 FR 12532, March 6, 2017). For now, the prior regulations published in 1986 and updated via guidance in 2007 and 2008 are used to define waters of the U. S. (DOD Corps of Engineers Department of the Army 1986, USACE 2008a), which consists of the following types of aquatic resources: traditional navigable waters, 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 (e.g., typically three months), and wetlands that directly abut such tributaries. In addition, USACE will decide jurisdiction for certain types of waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water. These include non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The definition of "wetlands" under the CWA follows the 1986 regulations, as "areas 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" (DOD Corps of Engineers Department of the Army 1986). Wetlands generally include swamps, marshes, and similar areas but can also include other periodically inundated areas that produce wetland conditions. CWA wetlands are determined by the presence of all three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology).

Where project activities will result in placement of fill or other impacts to waters of the U. S. (wetlands or other waters), the project could be subject to either a general, an individual permit, or may be exempt from regulatory requirements under Section 404 of the CWA based on review by the USACE. If certain conditions are met, some activities are granted a blanket authorization under the provisions of a general permit through the Nationwide Permit (NWP) system. The proposed project will require a CWA Section 404 Permit from USACE, anticipated to be NWP 14 for Linear Transportation Projects.

2.1.1.3. CWA SECTION 401

Section 401 of the CWA ensures that federally permitted activities comply with the federal CWA and state water quality laws. Section 401 is implemented through a review process that is conducted by the California Regional Water Quality Control Board (RWQCB), and is triggered by the Section 404 permitting process. Since a CWA Section 404 permit from USACE will be necessary for this project, a RWQCB Section 401 Water Quality Certification will also likely be required.

2.1.1.4. SECTION 10 OF THE RIVERS AND HARBORS ACT

Section 10 of the Rivers and Harbors Act requires a permit for creating obstructions (including excavation and fill activities) to the navigable capacity of waters of the U. S. Navigable waters are defined as those 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. The USACE grants or denies permits based on the effects on navigation. Although this project is within a navigable waterway, the U. S. Coast Guard determined that the project conforms to Advance Approval criteria in 33 CFR 114.70, as listed as a Categorical Exclusion in their NEPA implementing regulations, and no further review is required by the U. S. Coast Guard (letter to Caltrans on January 18, 2018; see Section 2.4). Because this review is valid for three years, additional review may be needed if construction starts after January 2021.

2.1.1.5. FEDERAL ENDANGERED SPECIES ACT (FESA)

The FESA provides legal protection for plants and animals that are in danger of extinction, and classified as either threatened or endangered. FESA Section 7 requires federal agencies to make a finding on all federal actions as to the potential to jeopardize the continued existence of any listed species potentially affected by the action, including the approval by an agency of a public or private action, such as FHWA funding or the issuance of a permit by USACE.

Critical Habitat is defined in FESA Section 3 as:

- (i) The specific areas within the geographic area occupied by a species at the time it is listed in accordance with the Act, on which are found those physical or biological features that are:
 - (I) essential to the conservation of the species, and
 - (II) that may require special management considerations or protection; and
- (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

FESA Section 7 requires that federal agencies shall, in consultation with the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of Critical Habitat. Per FESA Section 9, it is unlawful to “remove and reduce to possession” federally listed plant species from areas under federal jurisdiction. FESA Section 9 also protects federally listed fish and wildlife species from unlawful “take.” “Take” is defined by FESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”

The documentation submitted to USFWS and/or NMFS analyzing impacts to federally listed species and Critical Habitat is typically a Biological Assessment. Once USFWS and/or NMFS review a Biological Assessment for a project, they may issue a federal Biological Opinion and Incidental Take Statement under FESA Section 7 that includes provisions for legal take, provided that specific mitigation measures are employed for construction.

Pursuant to FESA Section 7, consultation with USFWS will be necessary for potential impacts to tidewater goby (*Eucyclogobius newberryi*) and tidewater goby Critical Habitat. Consultation with NMFS will be necessary for potential impacts to southern California steelhead (*Oncorhynchus mykiss*) and steelhead Critical Habitat.

2.1.1.6. MAGNUSON-STEVEN'S FISHERY CONSERVATION AND MANAGEMENT ACT

The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies such as FHWA, and Caltrans through NEPA Assignment, to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by that agency that may adversely affect essential fish habitat (EFH), which includes those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. Federal agencies may use existing consultation/environmental review procedures, such as a Biological Assessment, to satisfy the Magnuson-Stevens Fishery Conservation and Management Act consultation requirements.

EFH consultation with NMFS will most likely be required for this project. According to NMFS, the proposed project may occur within EFH for various species within the Pacific Coast Groundfish (PCG) and Coastal Pelagic Species (CPS) Fishery Management Plans (see Section 2.4).

2.1.1.7. MIGRATORY BIRD TREATY ACT

The federal Migratory Bird Treaty Act protects all migratory birds, including their eggs, nests, and feathers. It was originally drafted to end the commercial trade in bird feathers popular in the latter part of the 1800s. The Migratory Bird Treaty Act is enforced by the USFWS, and potential constraints to species protected under this law may be evaluated by the USFWS during the consultation process. Project-related impacts to nesting birds will need to be avoided.

2.1.1.8. MARINE MAMMAL PROTECTION ACT

The Marine Mammal Protection Act of 1972, as amended, generally prohibits "take" of marine mammals in U. S. waters by any person and by U. S. citizens in international waters and the importing of marine mammals and marine mammal products into the United States. The definition of "take" is the same as in the FESA. As with the FESA, jurisdiction for Marine Mammal Protection Act is shared by NMFS and USFWS. Early consultation with the NMFS or USFWS should occur to identify impacts and mitigation commitments in the NEPA document. An Incidental Harassment Authorization from NMFS or USFWS is required if the project could result in a take of any marine mammal. Although NMFS expressed concerns over the possibility that this project may impact marine mammals (see Section 2.4), Caltrans does not anticipate that this project will involve take marine mammals due to lack of records of marine mammals in Goleta Slough (see Section 3.5).

2.1.1.9. COASTAL ZONE MANAGEMENT ACT

The Coastal Zone Management Act of 1972 sets up a program under which coastal states are encouraged to develop coastal zone management programs. All federal development activities and development requiring federal permits or funding affecting land or water areas or resources within the coastal zone and subject to the Coastal Zone Management Act, which applies to this project. States with an approved coastal zone management program can review federal permits and activities to determine if they are consistent with the state's management plan. A certification of consistency with the approved Coastal Zone Management Plan is required from the state before federal approval can be granted. In Santa Barbara County, this determination is made by the California Coastal Commission (CCC).

2.1.1.10. EXECUTIVE ORDER 11990 – PROTECTION OF WETLANDS

Executive Order 11990 was issued on May 24, 1977, directing federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

2.1.1.11. EXECUTIVE ORDER 13112 – INVASIVE SPECIES

The National Invasive Species Council was established by Executive Order 13112 to ensure that Federal programs and activities to prevent and control invasive species are coordinated, effective and efficient. The National Invasive Species Council is co-chaired by the Secretaries of Commerce, Agriculture, and the Interior. Executive Order 13112 defines invasive species as "...an alien (or non-native) species whose introduction does, or is likely to cause economic or environmental harm or harm to human health". For this proposed project, the spread of invasive, exotic plants shall be controlled to the maximum extent practicable.

2.1.2. State of California Policies and Regulations

2.1.2.1. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Guidance for determining CEQA significance thresholds is based on Appendix G of the State CEQA Guidelines. Using these guidelines, activities requiring CEQA review within the project study area could have a significant impact on biological resources if they:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife (CDFW) or the USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by CWA Section 404;
- Interfere substantially with the movement of any resident or migratory species of wildlife, wildlife corridors, or wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved state, regional, or local habitat conservation plan.

2.1.2.2. CALIFORNIA ENDANGERED SPECIES ACT (CESA)

California has a parallel mandate to the FESA, which is embodied in the CESA of 1984 and the Native Plant Protection Act of 1977. CESA ensures legal protection for plants listed as rare or endangered, and wildlife listed as threatened or endangered. The CDFW regulates activities that may result in the “take” of such species. Take is defined as hunting, pursuing, catching, capturing, or killing, or attempting to hunt, pursue, catch, capture, or kill listed species. Unlike FESA, this definition does not encompass harm, harassment, or habitat modification, but rather includes only acts leading to the death of a listed species.

Take of state-listed species requires a California Fish and Game Code (CFGF) Section 2081 Incidental Take Permit from CDFW. This process requires submittal of a permit application package and is like the FESA consultation process, except that the CDFW is the regulatory and decision-making agency. As no state listed species are anticipated to be subjected to take for this proposed project, a Section 2081 Incidental Take Permit from the CDFW will not be required.

2.1.2.3. CALIFORNIA FISH AND GAME CODE (CFGF) SECTION 1602

CFGF Section 1602 requires any person, state or local agency, or public utility proposing a project that may affect a river, stream, or lake to notify CDFW before beginning the

project. If activities will result in the diversion or obstruction of the natural flow of a stream; substantially alter its bed, channel, or bank; impact riparian vegetation; or, adversely affect existing fish and wildlife resources, a Lake and Streambed Alteration Agreement is required. It presents conditions of approval by CDFW relative to the project.

A Lake and Streambed Alteration Agreement from CDFW will be required for this project. The boundary of CDFW jurisdiction for this project is the edge of the stream channel to the top of bank or the adjacent riparian zone. However, there are no specific regulations or guidance on determining this boundary. Riparian zones are generally considered areas that are “transitional between terrestrial and aquatic ecosystems” and have a unique set of physical ecological factors in comparison to the surrounding landscape (Griggs 2009).

2.1.2.4. PORTER-COLOGNE WATER QUALITY ACT

Under California’s Porter-Cologne Water Quality Control Act, discharges to wetlands and other “waters of the State” are subject to state regulation. Under California State law, discharges of “waste” (including clean fill, riprap or other revetment, excavation sidecasting, dredge spoils, soil displaced while clearing vegetation, etc.) where it could affect waters of the State must first file a report with the appropriate RWQCB, which will regulate the discharge as necessary to protect the beneficial uses of the waters. Discharging without filing the required report may result in civil penalties and the discharger may be also required to remove the discharged material and restore the condition of the water body.

In general, the RWQCB will regulate discharges to federally non-jurisdictional isolated waters in much the same way as they do for federal-jurisdictional waters, using the Porter-Cologne Act rather than CWA authority. The RWQCB issues a Waste Discharge Requirement (WDR) Permit under the Porter-Cologne Water Quality Act if only federally non-jurisdictional waters of the State will be potentially impacted. No WDR permit will be required for this project, because federally jurisdictional waters will also be impacted and all impacts to waters of the State will be authorized under the CWA Section 401 permitting process.

2.1.2.5. OTHER SECTIONS OF THE CALIFORNIA CFGC

CFGC Section 3503 includes provisions to protect the nests and eggs of birds. Sections 3511, 4700, 5050, and 5515 include provisions to protect Fully Protected species. The CDFW is unable to authorize incidental take of Fully Protected species when activities are proposed in areas inhabited by those species. Any take of nesting birds and Fully Protected species must be avoided. Senate Bill 857 amended CFGC adding Article 3.5 (commencing with Section 156) to Chapter 1 of Division 1 of, the Streets and Highway Code, relating to fish passage. Specific provisions require that Caltrans locate, assess and remediate barriers to fish passage, specifically for anadromous naturally spawning salmon and steelhead populations.

2.1.2.6. CALIFORNIA COASTAL ACT

The California Coastal Act mandates that local governments prepare a land use plan and schedule of implementing actions to carry out its policies. The California Coastal Act places the highest priority on the preservation and protection of natural resources, including Environmentally Sensitive Habitat Areas (ESHAs) (e.g., wetlands and dunes). The proposed project is located within the Coastal Zone of California, and at this location, both the California Coastal Act and federal Coastal Zone Management Act are under the jurisdiction of SBC. As such, project will require a Coastal Development Permit (CDP) from SBC, or a waiver to satisfy provisions of the California Coastal Act.

ESHAs in SBC are “areas which contain unique natural resources and/or endangered species of animal or plant life and existing and potential development may have the impact of despoiling or eliminating these resources” (SBC 2018). SBC has special development standards for the following specific type of habitats (which are considered ESHAs): dune, wetlands, native grassland, vernal pool, butterfly tree, marine mammal rookery and hauling ground, white-tailed kite, rocky points and intertidal, subtidal reef, seabirds nesting and roosting sites, native plant community, and stream. Under the Coastal Commission’s definition of wetlands (California Code of Regulations Section 13577(b)), a wetland need only display one of the parameters typically used to define wetland areas, a predominance of wetland vegetation, hydric soils, or wetland hydrology. SBC supports this definition, and further describes the upper limit of a wetland as:

- a. The boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; or
- b. The boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or
- c. In the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation and land that is not...” (SBC 2018).

2.2. Studies Required

A query of the CDFW California Natural Diversity Database (CNDDDB) was originally conducted on June 26, 2016, for the U. S. Geological Survey quadrangle encompassing the project site (Goleta, California) and the surrounding quadrangles (Dos Pueblos Canyon, Lake Cachuma, San Marcos Pass, Little Pine Mountain, and Santa Barbara). The CNDDDB was also checked for updates during preparation of this document, and the list in Appendix B reflects the latest available information of a search in the project’s geographic setting (five miles east and west, Pacific Ocean to the ridge of the Santa Ynez Mountains; CNDDDB 2018). The known occurrences of sensitive species have been inventoried and mapped, to varying degrees of accuracy, by the CNDDDB (2018). Additional occurrence information was obtained from the NMFS and USFWS official species websites, Sullivan et al. (2009), iNaturalist (2018), and CDFW life history accounts and range maps.

A request for an official USFWS species list from the Ventura USFWS Office was originally made online on June 22, 2016, via the USFWS Information, Planning, and Conservation System (IPaC) website. The latest update to the official USFWS list for this

NES was obtained from IPac on July 3, 2018 (see Appendix C). A request for an official NMFS species list was requested via letter and email on July 29, 2016 and the official NMFS species list was received on August 8, 2016. The latest update to the official NMFS species list for this NES was obtained on July 3, 2018, by using the Caltrans Google Earth portal (CT Earth), created in cooperation with the NMFS's West Coast Region (November 2016). The process generated a query of the Goleta quadrangle and resulted in a list of all ESA listed species, Critical Habitat, EFH, and species protected under the Marine Mammal Protection Act, which was e-mailed to a special NOAA mailbox designated for NMFS Species Lists, also on July 3, 2018 (see Appendix C).

The studies conducted for this project included botanical surveys for sensitive plant species, general reconnaissance-level wildlife surveys, and a jurisdictional waters assessment. Botanical surveys for sensitive plants and reconnaissance wildlife surveys were conducted by Caltrans biologists in 2016 and 2018 (see Section 2.3). The botanical surveys were floristic (i.e., conducted when target species would be flowering and identifiable) following the USFWS (2000) and CDFW (2018a) guidelines. Plants were identified with dichotomous keys using The Jepson Manual: Vascular Plants of California (Baldwin et al. 2012). General reconnaissance-level wildlife surveys coincided with the botanical surveys and species that were observed were documented. A list of species observed is included in Appendix D.

All low-lying areas, wet areas, drainage conveyances, and waterbodies were evaluated to determine whether they qualified as waters of the U. S. or waters of the State, by reviewing National Wetland Inventory mapping (USFWS 2016), soils mapping and the hydric soils list (USDA NRCS 2006, 2018), and conducting field surveys. Regulatory jurisdiction, including boundaries of wetlands and other waters, were delineated in the BSA following the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987), the Arid West Regional Supplement to the Corps of Engineers Wetland Delineation Manual (USACE 2008b), guidance on jurisdictional determinations (USACE and EPA 2007, Mersel and Lichvar 2014), and California Code of Regulations Section 13577(b) for CCC wetlands.

Potential wetlands regulated by the CWA were assessed for the presence of three parameters, hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland delineation data was recorded on forms provided in the Regional Supplement (Corps 2008b). Plant indicator status followed the 2016 The National Wetland Plant List (Lichvar et al. 2016). The limits of "other waters" as regulated by the CWA were determined by field indicators of the OHWM, and recorded on data forms provided in USACE and EPA (2007). The limits of CDFW and RWQCB jurisdiction were characterized as the top of bank or boundary of the riparian zone, when applicable. Single-parameter ESHA wetlands, protected by the CCA, were also surveyed and mapped, where found. Locations of wetland sample points and boundaries of jurisdictional features were recorded using a Geographic Positioning System receiver when access and satellite capture was available (Trimble GeoXt GeoExplorer 6000 series, accuracy of up to 1-meter), and using Geographic Information System (ArcMap 10.x) with project survey data and aerial imagery backgrounds (1:700-scale) when needed to supplement field mapping.

2.3. Personnel and Survey Dates

Several field surveys were completed to evaluate the various biological resources associated with this project, as listed in Table 1. Field surveys were initiated in 2016 to evaluate biological resources in the project limits at that time. Additional surveys were conducted in 2018 to cover portions of the current project limits that were not evaluated in 2016 (Section 3.2 describes the current Biological Study Area).

Table 1. Survey Tasks, Dates, Personnel, and Methodology.

Studies or Surveys	Dates	Personnel	Methodology
Floristic Botanical Survey; Reconnaissance Wildlife Survey	April 22, 2016 May 27, 2016 July 27, 2016 July 28, 2016	Geoff Hoetker	USFWS (2000) and CDFW (CDFG 2009) for plants; no formal protocol for wildlife
Jurisdictional Waters Assessment	August 26, 2016 September 26, 2016 January 19, 2017	Geoff Hoetker	Environmental Laboratory (1987) and USACE (2008)
Roosting Bat Survey	April 22, 2016	Geoff Hoetker	No formal protocol
Roosting Bat Survey	July 27, 2016	Geoff Hoetker	Same as above
Roosting Bat Survey	January 19, 2017	Geoff Hoetker George Sistek	Same as above
Roosting Bat Survey	October 20, 2017	Geoff Hoetker Jennifer Moonjian Mindy Trask	Same as above
Floristic Botanical Survey; Reconnaissance Wildlife Survey; Jurisdictional Waters Assessment	May 14, 2018	Mindy Trask Amy Millan	Same as above
Jurisdictional Waters Assessment; Reconnaissance Wildlife Survey	May 23-24, 2018	Amy Millan Jennifer Moonjian	Same as above
Floristic Botanical Survey; Reconnaissance Wildlife Survey; Jurisdictional Waters Assessment	July 16, 2018	Mindy Trask Amy Millan Geoff Hoetker John Moule	Same as above

2.4. Agency Coordination and Professional Contacts

March 16, 2016: Caltrans submitted a request to NMFS for informal consultation pursuant to FESA Section 7 for geotechnical drilling for the proposed action.

April 14, 2016: NMFS provided Caltrans with a Letter of Concurrence for the geotechnical drilling (NMFS file number: WCR-2016-4527).

June 22, 2016: Geoff Hoetker (consultant biologist representing Caltrans District 5) received an official USFWS species list through the USFWS IPaC website.

July 19, 2016: Geoff Hoetker requested an official NMFS species list via letter and email for FESA Section 7 and EFH consultation for species under the jurisdiction of NMFS.

August 8, 2016: Caltrans received an official species list from NMFS.

August 17, 2016: Geoff Hoetker received an email from Adam Obaza (Habitat Specialist for NMFS Protected Resources Division) regarding the need for EFH coordination. NMFS suggested that the project area is likely within the EFH for PCG and CPS, and that estuarine habitat is of particular concern to PCG EFH.

December 2, 2016: Caltrans hosted a field meeting at the proposed project site with several regulatory agencies. In attendance included Dou-Shuan Yang (USFWS), Jay Ogawa (NMFS), Theresa Stevens (USACE), Paula Richter (RWQCB), Martin Potter (CDFW), and Michelle Wagner (CCC). The purpose of the meeting was to introduce the project, discuss design options, potential environmental impacts, and potential permitting implications, including the following:

- NMFS expressed concerns regarding whether the project might affect hydraulics within the area. NMFS noted that upstream flood control projects have been implemented to increase flood capacity, and that these projects should be taken into consideration to determine how they may affect the proposed bridge and stream hydraulics. Also, hydroacoustic impacts for steelhead will need to be analyzed if pile driving is required and will be subject to further discussion.
- USFWS also expressed concerns regarding whether the project may affect hydraulics within the area, particularly the potential for sand-bar breaches that could affect tidewater gobies. Regarding the potential for effects to the federally threatened California red-legged frog, USFWS mentioned that they had no records of California red-legged frogs within 2.3 miles of the project area and they do not expect California red-legged frog in the project area.
- USACE recommended that Caltrans review the 2017 NWP 14 (Linear Transport Crossings) thresholds for all build alternatives, as well as Regional and General Conditions. For the purposes of delineating high-tide jurisdiction, USACE indicated that Caltrans should examine tide charts or tide calendars within the past year for the highest recorded tide of the year (excluding storm surge data) and use this elevation for the high tide delineation. USACE also mentioned that bridge piles are not considered fill within tidally-influenced waters; however, piles may be considered fill by other regulatory agencies (e.g., RWQCB, SBC).
- RWQCB indicated that the project Environmental Document will need to clearly address the differences between the various build alternatives relative to sea level rise. RWQCB also reiterated the importance of contacting the Santa Barbara Municipal Airport, which occurs north of the proposed project, regarding whether

the airport may have any concerns with any of the proposed build alternatives and potential effects on stream hydraulics and flood control.

- CDFW inquired about the potential impacts to upstream hydraulics and that Caltrans should coordinate with the Goleta Slough Management Committee. Caltrans inquired whether CDFW was aware of occurrences of any nesting territories for the state-listed savannah sparrow within the project area. CDFW said they were unaware of any such occurrences, but that Caltrans may want to contact Mark Holmgren of the Santa Barbara Audubon Society for more information on potential local nesting records.
- SBC stated that they would like to review all proposed bridge alternatives and future approvals from other regulatory agencies.
- During the agency review meeting, the group observed cofferdam/dewatering construction methods for the SBC Public Works' ongoing Goleta Beach Park Bridge Replacement project (Caltrans project number: 51-C-0158) at the nearby Goleta Slough.

December 20, 2017: Caltrans Biologist Mindy Trask emailed the project hydraulics study and fish passage analysis to Jess Adams (NMFS) and received no follow-up comments or request for more information.

January 2, 2018: Mindy Trask emailed Jay Ogawa to provide an updated project schedule, particularly with regard to exploratory drilling, which was anticipated to take place during the summer of 2018, not 2017 as was originally planned. Jay Ogawa responded on the same day, indicating the LOC was still valid given the change in construction year.

January 18, 2018. Letter from the U. S. Coast Guard regarding Caltrans' request for project review. The letter summarizes that although the project is in a navigable waterway, it "is not navigated by anything larger than small motorboats" and the U. S. Coast Guard has given the project "advanced approval" and indicated that no further review will be required. The approval is valid for three years and requires Caltrans to submit photographs and as-built drawings.

February 7, 2018: Mindy Trask emailed CDFW (Christine Found-Jackson) to provide a project update and ask about survey protocols or other information on Belding's savannah sparrow, and other concerns by CDFW about the project. Matt Chirdon (CDFW) replied on May 21, with recommendations for Belding's savannah sparrow survey methods.

May 8, 2018: Mindy Trask emailed Jess Adams and Chris Dellith (USFWS) to provide an update, request for feedback, and request to combine the Biological Assessment for steelhead and tidewater goby. Jess Adams replied to Caltrans that day with a request to consider possible project impacts to marine mammals, and an approval from NMFS for a combined Biological Assessment with USFWS species. Chris Dellith replied the

following day and reiterated prior direction from USFWS that they do not believe the California red-legged frog will be in the project area, but asked Caltrans to continue to coordinate about tidewater goby.

June 28 - July 12, 2018. Mindy Trask and Jess Adams discussed the potential presence of steelhead in the BSA in several email communications. Although steelhead were not expected to be in the stream during construction of the nearby Goleta Park Bridge replacement project (performed in 2016), NMFS believes that steelhead have the potential to be rearing in the waters surrounding the SR-217/San Jose Creek bridge project during the summer construction season.

July 3, 2018: Caltrans obtained official species lists from NMFS and USFWS as described in Section 2.2.

July 10, 2018. Mindy Trask emailed Jess Adams for more information on CPS EFH in response to Adam Obaza's email on August 17, 2016 (see above). Bryant Chesney from NMFS provided additional guidance on CPS EFH.

July 14, 2018. Mindy Trask emailed the project hydraulics study and fish passage analysis to Chris Dellith and Matt Chirdon and received no follow-up comments or request for more information.

July 17, 2018. Chris Dellith replied to Mindy Trask's email confirming that tidewater goby critical habitat is in the project area and that a combined Biological Assessment with NMFS species is acceptable.

2.5. Limitations That May Influence Results

Surveys were timed to optimize the potential for confirming presence/absence of special-status plant and animal species and were conducted under favorable weather conditions. Special-status plant species with the potential to occur in the project area may be annual species that may be difficult to detect following seasons of abnormal rainfall, or during those times of the year when particular species do not typically flower. However, botanical surveys were timed to accommodate the flowering period for the species considered in this NES and are considered sufficient.

Special-status animal species with the potential to occur in the project area may be cryptic or transient, migratory species. The population size and locations of special-status species may also fluctuate dramatically through time. This may lower the predictive value of known species locations as indicators of future occurrences. Regulatory agencies may require that Caltrans repeat botanical and wildlife surveys before the project goes to construction.

Chapter 3. Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

3.1.1. Biological Study Area (BSA)

The BSA is defined as the area that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities (see Figure 2). The size of the BSA is approximately 14 acres (ac) and includes a polygon encompassing the proposed bridge project site, associated infrastructure, and staging/access areas (see Photos 1 – 3 in Appendix E).

The BSA occurs in a coastal setting within the Central Coast region of California, just east of the University of California Santa Barbara campus in Goleta, California (see Figure 1). The BSA is within the jurisdiction of SBC, between the cities of Santa Barbara and Goleta. San Jose Creek is one of many streams that feed into Goleta Slough, a large estuary that drains a 45-square mile watershed. Most of the Goleta Slough, including the BSA, is within the Goleta Slough Ecological Reserve, administered by the California Department of Fish and Wildlife. The BSA occurs within planning area for the Goleta Slough Ecosystem Management Plan (ESA Associates 2015), which also includes the City of Santa Barbara Airport, the UCSB Storke Campus, More Mesa open space, Goleta Beach (a SBC Park), Goleta Sanitary District, Southern California Gas Company, Patterson Agricultural Block, and small areas residential developments. Most of the parcels within and surrounding the BSA are owned and managed by Southern California Gas Company.

3.1.2. Physical Conditions

The BSA is situated on a coastal plain in the western Transverse Range physiographic province along an east-west-trending coastline. The coastal plain is about 4.5 miles wide near Santa Barbara and Goleta, but narrows to about two miles wide west of Goleta and east of Santa Barbara. The Santa Ynez Mountains rise sharply in elevation to the north and the Pacific Ocean is to the south. The BSA is on the first terrace above the Pacific Ocean, at approximately 10 ft in elevation.

This region features a "Mediterranean climate" with warm to hot, dry summers and mild to cool, wet winters. The project's proximity to the ocean results in a buffering of high and low temperatures. The year-round average temperature in Santa Barbara is 62 degrees Fahrenheit (°F), with an average maximum of 70 °F and an average minimum of 54 °F (Your Weather Service 2018; based on 1981 – 2010 normal data). Most rainfall occurs during the winter months (the wettest month is February), with an average rainfall of approximately 19.4 inches per year (see Figure 3). However, the most recent calendar year was slightly warmer (average high at 72°F) and drier (9.94 total inches of precipitation), with peak precipitation in March of 2018.



Figure 2. Biological Study Area.

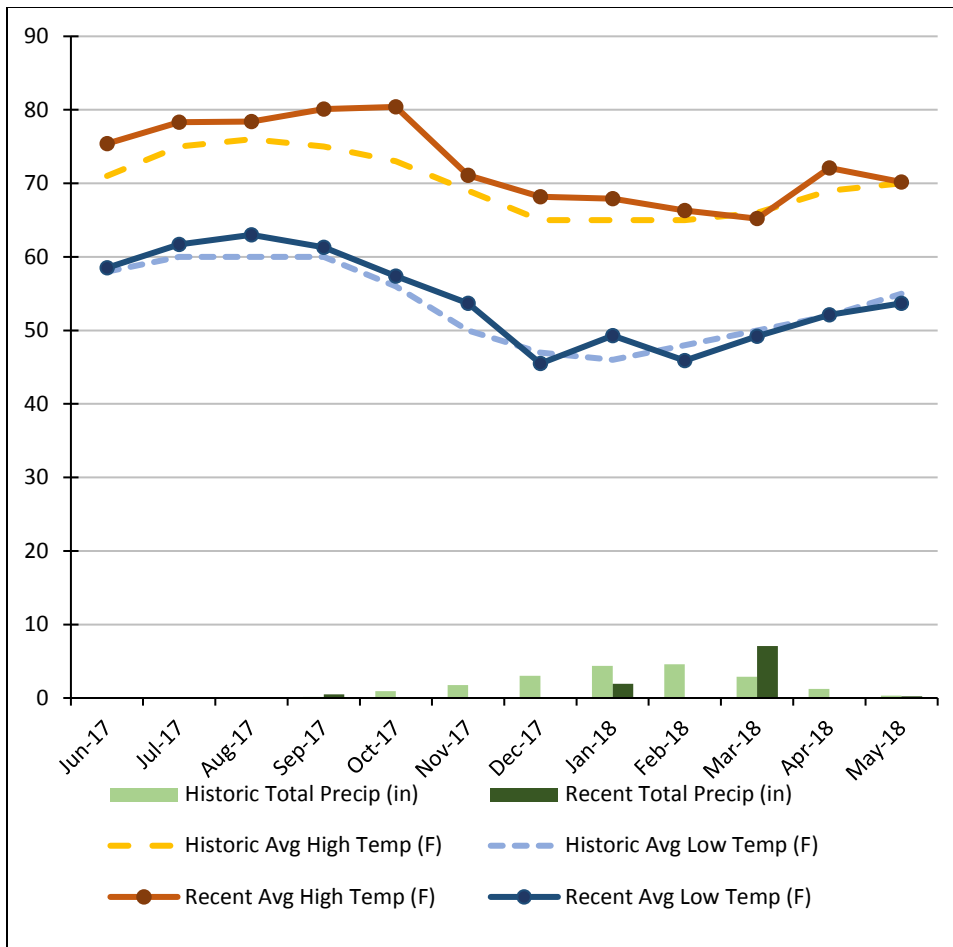


Figure 3. Historic and recent weather in Santa Barbara, California.

3.1.2.1. SOIL CONDITIONS

The Natural Resources Conservation Service (NRCS) has mapped four soil map units within the BSA: 1) Aquentes, fill areas; 2) Aquepts, flooded; 3) Camarillo fine sandy loam; and 4) Xerothents, cut and fill areas (USDA NRCS 2006) (see Figure 4). Xerothents are mechanically manipulated soils where the original profile is no longer discernable. Although the soil is typically well-drained, permeability, runoff and water holding capacity are variable. This soil type is mapped on the west side of San Jose Creek, north of SR-217. Aquentes are reclaimed areas of soils resulting from filling low, poorly drained areas near the ocean. The soil material is typically used for fill, and the depth of the fill is variable. Permeability is typically rapid, runoff is slow, and water holding capacity is variable. This is the predominant soil unit in the developed parts of the project vicinity, particularly at the airport. Within the BSA, Aquentes soils occur on the west side of San Jose Creek, mainly to the south of SR-217.

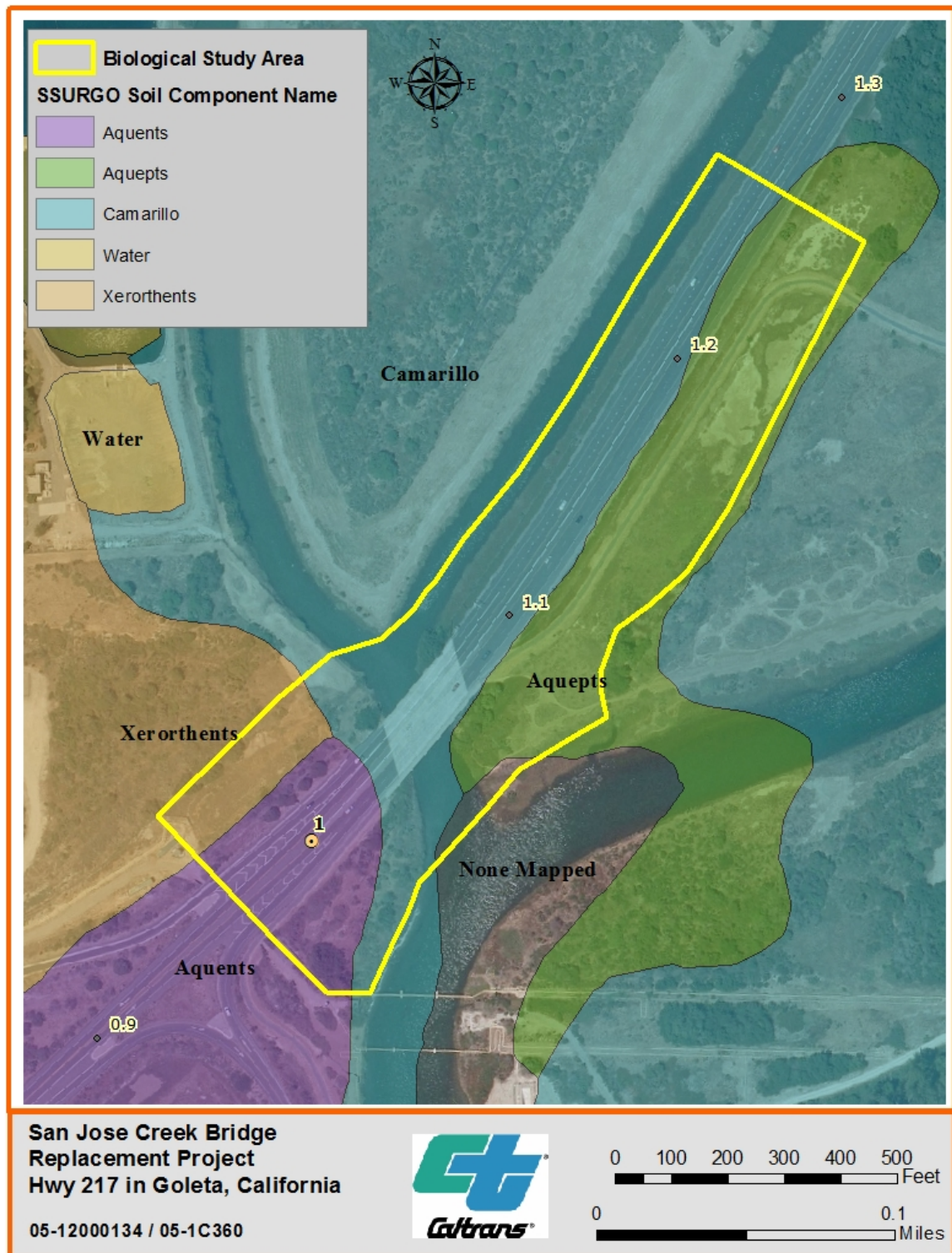


Figure 4. Soils in the project area.

Aquepts are nearly level soils along the coast that are periodically covered by tidal water. Typically, they are highly stratified thin layers of coarse to fine textured soil material and occasional layers of peat, very saline and support salt-tolerant, water-loving vegetation. These soils are poorly drained and have a high water table and variable permeability. The Aquepts soil unit is the predominant unit Goleta Slough, exceeded only by Aquents. Within the BSA, this soil type occurs south of SR-217 and east of San Jose Creek. Camarillo fine sandy loam consists of very deep, somewhat poorly drained soils that formed in alluvium derived from sedimentary rocks. This soil unit is found in low lying areas that have a water table at a depth of 1-2 ft during the winter. Runoff is very slow, permeability is moderate, and salinity is slight to moderate in the subsoil. This soil unit is the predominant type in the first terrace above Goleta Slough. Except for the southwest corner of the SR-217 bridge, this soil unit occurs around San Jose and San Pedro creeks.

3.1.2.2. HYDROLOGIC CONDITIONS

The watershed of San Jose Creek and tributaries encompasses approximately 8,000 ac on the south slope of the Santa Ynez Mountains (see Figure 5). The creek traverses down through the foothills into residential sections of Goleta and through the commercial district of Old Town Goleta. About 4,000 feet of the stream is channelized and lined between Old Town Goleta and about 2,000 feet north of the SR-217 bridge. The entire BSA and most of the surrounding landscape is within the 100-year floodplain (see Figure 6). The lower portion of San Jose Creek that is within the tidal influence is perennial (includes the BSA; see Photo 3 in Appendix E). When the mouth of Goleta Slough is open to tidal flow and tides are high, the upstream extent of the tidally influenced portion of San Jose Creek can reach Hollister Avenue, about one mile upstream of the SR-217 bridge.

The Goleta Slough was a large harbor prior to 1861. A large flood with resulting siltation filled much of the harbor and created a shallow lagoon (ESA Associates 2015). In the late 19th century, heavy cattle grazing along the surrounding foothills followed by wide ranging wildfires, heavy rains, and flooding caused excessive erosion and deposition of sediment in the mouths of the creeks emptying into Goleta Bay. Over time, sedimentation transformed the lagoon into a coastal salt marsh which has been reduced in size by further siltation and land filling to accommodate development such as the Santa Barbara Airport (circa 1940). During development of the airport and other parcels in the area, the waterways and marshes of the slough were diked, drained, diverted and channelized into four main waterways that exist today, Atascadero Creek, Jose Creek, San Pedro Creek, and Tecolotito Creek (also called Goleta Slough in the lower reaches) (see Figures 2 and 5).

The entire reach of San Jose Creek from Goleta down to the Pacific Ocean, as well as the adjacent waterways, did not remotely exist as it is today (ESA Associates 2015). The project reach of San Jose Creek is at the location of Mescalitan Island, which was leveled to produce fill for the airport. The construction of Ward Memorial Drive in the 1960s resulted in more filling and diverting of waters in the area, after which San Jose Creek appears on historical photographs. It's likely that the origin of this stream in the Santa Ynez Mountains is natural, and its connection through Goleta and into Goleta Slough was gradually altered over time.

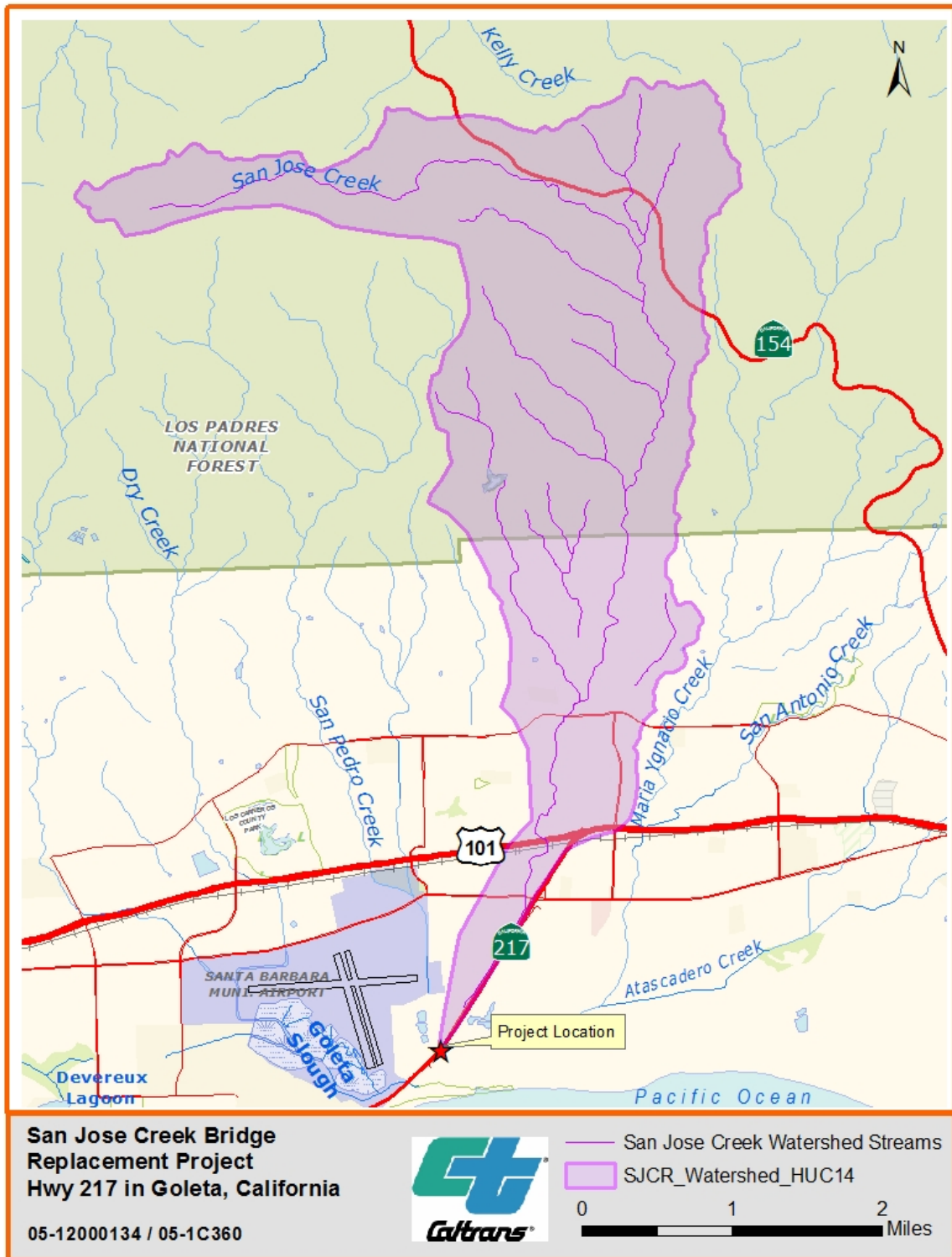


Figure 5. San Jose Creek watershed.

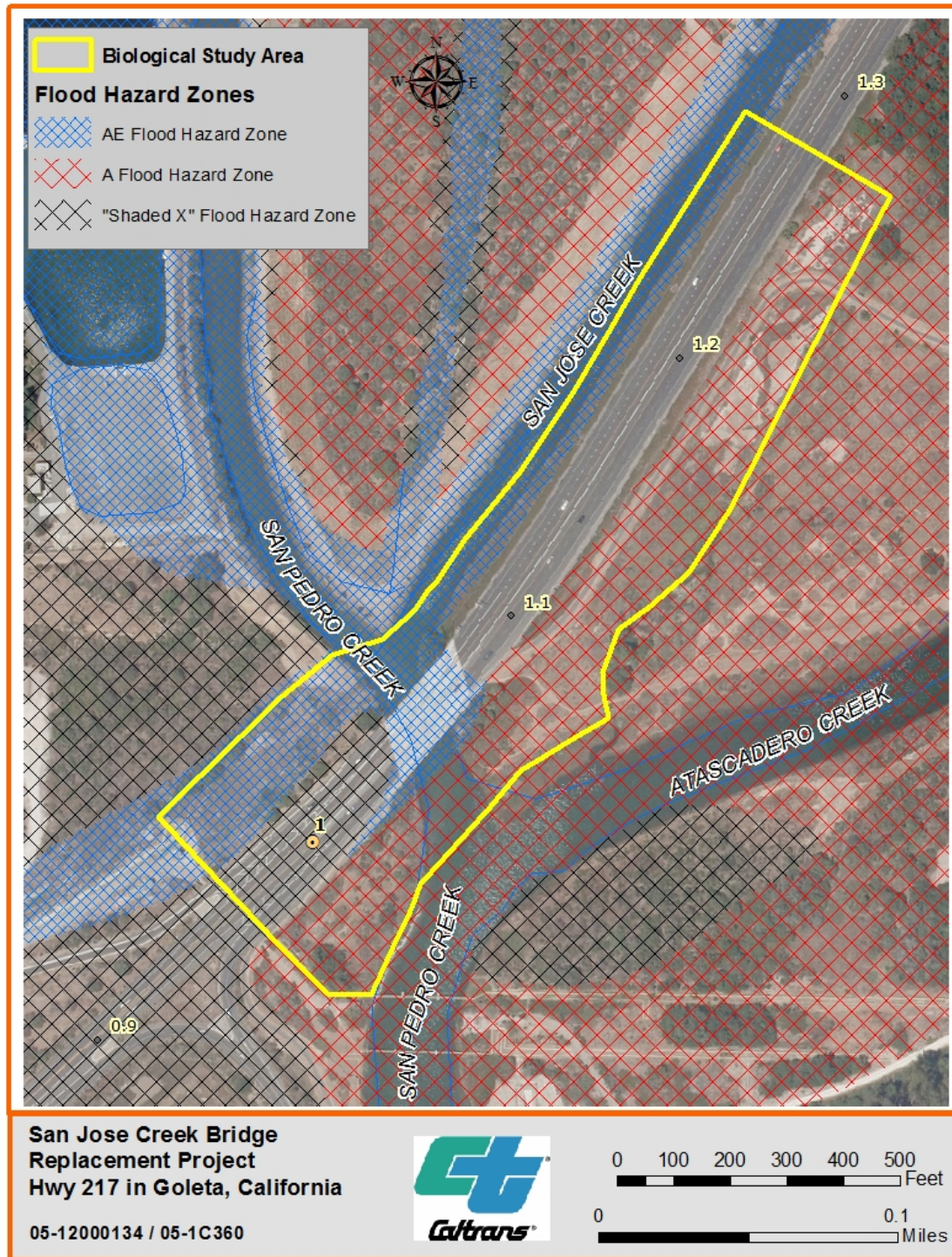


Figure 6. Floodzones in the project area.

The SR-217 bridge occurs just downstream of the confluence of San Jose and San Pedro Creeks, and just upstream of the confluence of San Jose and Atascadero Creeks (see Figure 2). The SR-217 bridge is located approximately 2,500 upstream of the mouth of Goleta Slough at the Pacific Ocean. Tidal circulation within the lower portion of Goleta Slough (including the project reach of San Jose Creek) is driven by tidal flows passing through the mouth of the lagoon at Goleta Beach. Freshwater inflows from the streams in the watershed also influence water quality, both by reducing salinity, as well as transporting sediments and potentially also contaminants from the watershed.

Stream flow and wave processes cause the lagoon mouth to periodically open and close. Consequently, the project reach of San Jose Creek experiences intermittent periods of tidal action separated by periods where the lagoon is closed to the tides. Although the salinity of the project reach of San Jose Creek is unknown, it probably fluctuates seasonally, and is expected to be closer to the range of salt water (33 parts per million; Padre Associates 2010) than freshwater (0 parts per million) during most of the year (based on indicators such as a salt crust on adjacent soils and dominance of pickleweed [*Salicornia pacifica*], a halophyte).

As water flows into the Slough from the upstream watersheds it carries sand, silt, cobbles and other sediment particles, some of which may deposit in the lagoon while a fraction washes out into the ocean (Padre Associates 2010). During the summer months as streamflow diminishes and sediments accumulate in the inlet mouth, the beach forms a sill or berm that limits the amount of tidal influence (see Photo 4 in Appendix E). Sediment also deposits into the lower reaches of San Pedro, San Jose, and Atascadero creeks. SBC Flood Control District routinely dredges these streams, up to about one mile from the mouth (called “desilting”), and also breaches the berm at the mouth to maintain water quality in the slough (Padre Associates 2010). An average of 3,630 cubic yards of sediment have been removed each year from San Jose Creek (20-year average) as part of flood control maintenance. However, the District has been maintaining sediment removal basins in this system for over 40 years to increase the creeks’ capacity to convey flood flows. The dredge spoils are typically deposited and spread out over Goleta Beach.

3.1.3. Natural Communities

Natural communities and vegetation within the BSA are characterized using the naming conventions of A Manual of California Vegetation (Sawyer et al. 2009) and the Preliminary Description of Terrestrial Natural Communities of California (Holland 1986). Natural communities within the BSA are shown in Figure 7. Table D1 in Appendix D has a complete list of vascular plants observed in the BSA, and representative photographs are presented in Appendix E. Numerous restoration projects near the BSA have been documented by the Goleta Slough Area Sea Level Rise and Management Plan (ESA Associates 2015). It is assumed that at least a portion of the vegetation mapped within the BSA has been planted as restoration.

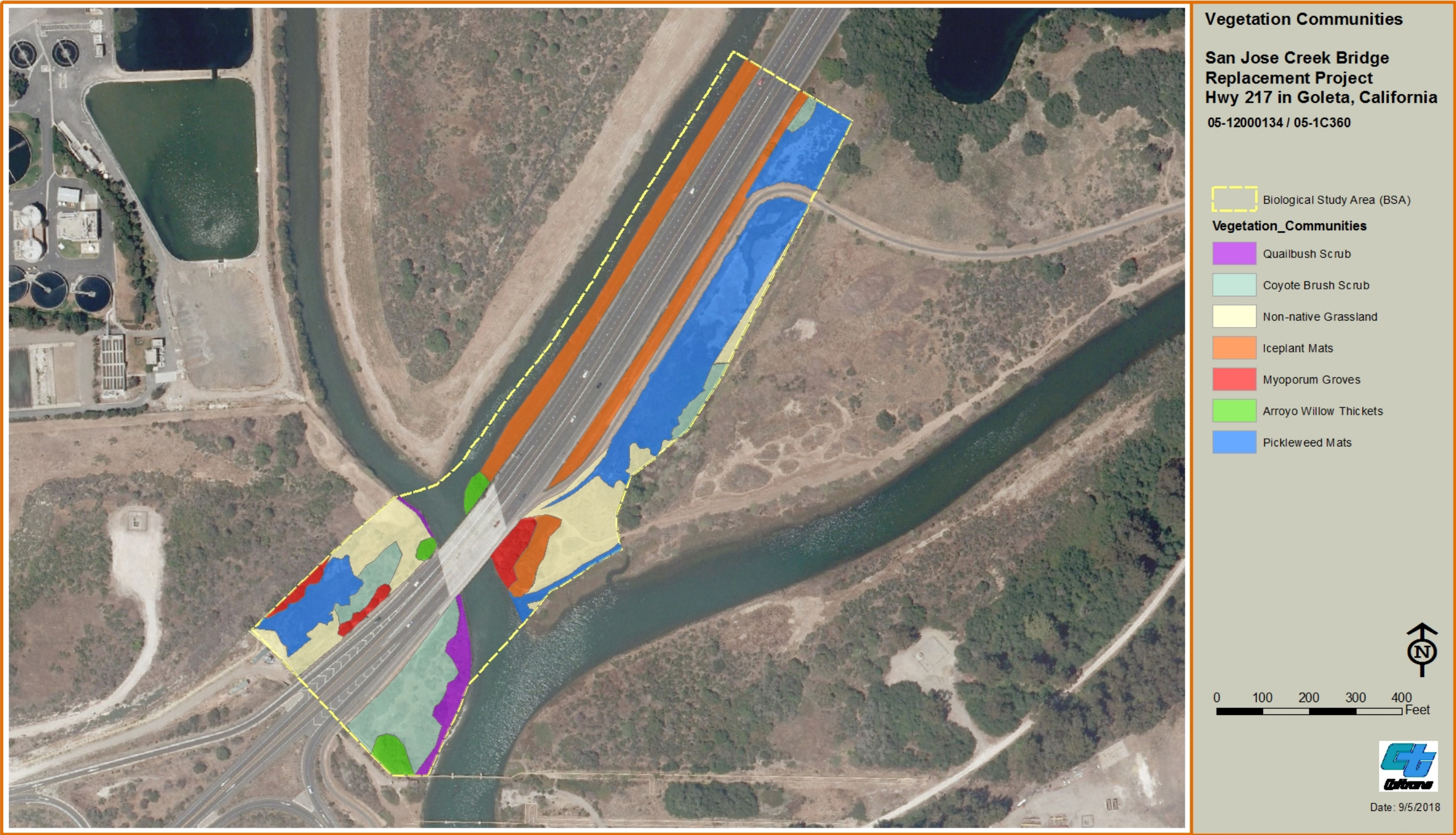


Figure 7. Plant communities in the BSA.

3.1.3.1. PICKLEWEED MATS

The alkaline flats and salt marsh areas within the BSA are classified in the Pickleweed Mats (= *Ascogonia pacifica* Herbaceous Alliance; Sawyer et al. 2009), because they are dominated almost exclusively by glasswort (*Sarcocornia pacifica* [= *Salicornia pacifica*]), more commonly known as “pickleweed” (see Photo 5 in Appendix E). This type most closely fits under the Southern Coastal Salt Marsh vegetative community as described by Holland (1988), which is a highly productive community dominated by herbaceous and suffrutescent, salt-tolerate hydrophytes forming dense cover and up to 3 ft tall. It is usually found along sheltered inland margins of bays, lagoons, and estuaries from about Point Conception to the Mexican border. The hydric soils are subject to regular tidal inundation by salt water for at least part of the year. Common associates of this community within the BSA include alkali heath (*Frankenia salina*), salt grass (*Distichlis spicata*), annual beard grass (*Polypogon monspeliensis*), fleshy jaumea (*Jaumea carnosa*), alkali weed (*Cressa truxillensis*), and poison hemlock (*Conium maculatum*). Alkali heath and fleshy jaumea are dominant in some areas, but not characterized or mapped as distinct communities due to small size.

3.1.3.2. NON-NATIVE GRASSLAND

This an annual grassland community dominated primarily by ripgut brome (*Bromus diandrus*) and red brome (*Bromus madritensis*). Non-native grasslands are characteristic of historically disturbed areas in dryland habitats throughout California, from lowlands near the coast all the way to the Sierra Nevada Mountains (Holland 1986). All three *Bromus* species are dominant in the BSA include, as well as black mustard (*Brassica nigra*) and poison hemlock (see Photo 6 in Appendix E). Based on dominant plant species, this community most closely matches the *Bromus* (*diandrus*, *hordeaceus*, *madritensis*) Herbaceous Alliance, but could also fit in the *Brassica nigra* and other mustards Herbaceous Semi-Natural Alliance, and the *Conium maculatum* - *Foeniculum vulgare* Herbaceous Semi-Natural Alliance (Sawyer et al. 2009). The Non-native Grassland community mapped in the BSA includes several isolated and small patches of glasswort and alkali heath that were not mapped as distinct plant communities due to their small size.

3.1.3.3. ICE PLANT MATS

Areas dominated by iceplant (*Carpobrotus edulis*) in the BSA fall under the *Mesembryanthemum* spp. - *Carpobrotus* spp. Herbaceous Semi-Natural Alliance in Sawyer et al. (2009). Although a similar invasive community is not listed in Holland (1986), prior to being invaded by iceplant, these areas were most likely Southern Coastal Bluff Scrub, which occurs on bluffs, disturbed land, sand dunes of the immediate coastline along the Pacific Coast, from Oregon to Baja California. Iceplant is a succulent, perennial herb native to the coast of South Africa, where the climate is similar to coastal California. It was introduced to California in the early 1900s as an erosion stabilization tool used on railroad tracks and later used by Caltrans on roadsides, and has been used as an ornamental for many years. It is still sold in nurseries. However, it is a highly invasive species in California (the California Invasive Plant Council [Cal-IPC] rating is High). Iceplant displaces native coastal species forming large masses of monotypic dense mats.

Within the BSA, this community occurs along both shoulders of SR-217 to the east of the bridge (see Photo 7 in Appendix E).

3.1.3.4. QUAILBUSH SCRUB

Much of the shrubby vegetation along the banks of Goleta Slough is most closely aligned with the *Atriplex lentiformis* Shrubland Alliance (Sawyer et al. 2009), which shares characteristics of Southern Coastal Bluff Scrub as described by Holland (1986). This scrub habitat consists of quailbush (also called big saltbush; *Atriplex lentiformis*) shrubs up to approximately 6 ft tall in areas exposed to moisture-laden winds with high salt content. Within the BSA, this community is found mostly on the west banks of San Jose Creek where it overhangs either barren slope or a narrow band of glasswort (not mapped as the Pickleweed Mats community due to small size) (see Photo 8 in Appendix E). The boundary between this community and the Coyote Brush Scrub community on the southwest bank is indistinct. Although not a traditional riparian community, it was classified as non-wetland riparian habitat for the jurisdictional determination due to its proximity to the stream and likelihood to function as riparian habitat (Griggs 2009).

3.1.3.5. COYOTE BRUSH SCRUB

Coyote brush (*Baccharis pilularis*) is dominant to co-dominant species in the *Baccharis pilularis* Shrubland Alliance (= Coyote Brush Scrub; Sawyer et al. 2009), with a grassy understory that is similar in species composition to the *Bromus* (*diandrus*, *hordeaceus*, *madritensis*) Herbaceous Alliance. Various emergent trees may be present at low cover. This is a widespread and common vegetation community throughout California, not only in coastal settings. Soils are variable, from sandy to relatively heavy clay. This community does not resemble any community in Holland (1986) due to the prevalence of invasive species. The *Baccharis pilularis* Shrubland Alliance is commonly found in a wide variety of historically disturbed sites, particularly roadsides. Seedlings of *B. pilularis* invade grasslands in the central coast, forming stands with decreased grazing and fire. Within the BSA, Coyote Brush Scrub is found mainly on the west side of San Jose Creek, in the compacted and disturbed properties owned and managed by Southern California Gas Company (see Photo 9 in Appendix E). Common associates within the BSA include red brome, black mustard, Italian thistle (*Carduus pycnocephalus*), onionweed (*Asphodelus fistulosus*), California blackberry (*Rubus ursinus*), bush sunflower (*Encelia californica*), purple sage (*Salvia leucophylla*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), and tree tobacco (*Nicotiana glauca*). Several dead shrubs or small trees are found within this community in the southwestern portion of the BSA.

3.1.3.6. ARROYO WILLOW THICKETS

The *Salix lasiolepis* Shrubland Alliance (= Arroyo Willow Thickets; Sawyer et al. 2009) is a dense, low, closed-canopy, broadleaf, winter-deciduous forest commonly found along low gradient streams in the central coast that have moist to saturated sandy or gravelly soils. It is dominated almost exclusively by arroyo willow (*Salix lasiolepis*), often with other willows or riparian tree species. This community most closely matches the Central Coast Arroyo Willow Riparian Forest community in Holland (1986). Some plants in the BSA are sufficiently tall to be characterized as trees. Fairly small patches of Arroyo

Willow Thickets are found on the north side of SR-217, on both stream banks (see Photo 10 in Appendix E). The cluster of arroyo willow trees on the west bank occurs at the outfall of the roadside ditch that drains into San Jose Creek. The understory is sparse, and includes California mugwort (*Artemisia douglasiana*), and poison oak (*Toxicodendron diversilobum*). The patch on the east side of San Jose Creek has a thick understory of garden nasturtium (*Tropaeolum majus*). A small patch is also found in the southwest corner of the BSA on Southern California gas property, with a California sycamore (*Platanus racemosa*) tree, a Fremont cottonwood (*Populus fremontii*) tree, and a snag.

3.1.3.7. MYOPORUM GROVES

Stands of ngaio tree (*Myoporum laetum*, often called “Myoporum”) are common in disturbed coastal habitats in California. Ngaio tree has escaped cultivation in many areas, and is commonly found near urban areas. It may crowd out native plants, growing to form dense stands. As an invasive species, it has a Cal-IPC rating of Moderate. The *Myoporum laetum* Woodland Semi-Natural Alliance (= Myoporum Groves; Sawyer et al. 2009) is found in small patches in the BSA, the largest of which is at the southeast corner of SR-217 and San Jose Creek (see Photo 11 in Appedix D). This area also has three Canary Island date palm trees (*Phoenix canariensis*), a cluster of giant reed (*Arundo donax*), and a homeless camp. There is no comparable community in Holland (1986), although historically, these areas may have been Coast Arroyo Willow Riparian Forest or Southern Coastal Bluff Scrub.

3.1.4. Fish and Wildlife

3.1.4.1. GENERAL SPECIES

A variety of fish use the waterways in Goleta Slough (including the project reach of San Jose Creek), at least seasonally, and at least 14 species have been reported in the past (Padre Associates 2010). The arrow goby (*Clevelandia ios*) dominates, but other common species include longjaw mudsucker (*Gillichthys mirabilis*), California killifish (*Fundulus parvipinnis*), yellow-fin goby (*Acanthogobius flavimanus*), cheekspot goby (*Ilypnus gilberti*) and fathead minnow (*Pimephales promelas*) (Fong et al. 1988 as cited in SBC 1993). Fish surveys in the 1990s identified the following species in the slough: topsmelt (*Atherinops affinis*), California killifish, staghorn sculpin (*Leptocottus armatus*), tidewater goby (*Eucyclogobius newberryi*), diamond turbot (*Hypsopsetta guttulata*), California halibut (*Paralichthys californicus*), shiner surfperch (*Cymatogaster aggregata*), mosquitofish (*Gambusia affinis*), longjaw mudsucker, shadow goby (*Quietula y-cauda*), cheekspot goby, yellow-fin goby, arrow goby, three-spined stickleback (*Gasterosteus aculeata*), prickly sculpin (*Cottus asper*), fathead minnow and striped mullet (*Mugil cephalus*) (Padre Associates 2010).

Up to 279 bird species have been reported within the Slough in the past (The Planning Center 1984 as cited in Goleta Slough Management Committee 1997). Of these, 121 species are water-associated, and 158 species occur primarily in upland areas. Ducks and shore birds, primarily winter visitors, comprise most of the water-associated birds, and 12 species are known to breed in the Slough. The salt marsh vegetation and mudflats offer roosting and resting areas and foraging habitat for several avian species. Sora and Virginia rails, several species of herons, and the State endangered Belding's savannah

sparrow all feed in the dense saltmarsh vegetation. Raptors including northern harrier, red-tailed hawk, American kestrel, barn owl, and the regionally rare white-tailed kite all forage above the salt marsh vegetation. Peregrine falcons also forage over this area on rare occasions. Caltrans observed 28 bird species during field surveys in 2018 including several cliff swallow nests under the bridge (see Table D2). A great blue heron rookery consisting of six to nine active nests occurs along the channel at the mouth of the Goleta Slough, about 1000 ft southeast of the BSA.

3.1.4.2. MIGRATION AND TRAVEL CORRIDORS

Wildlife migration corridors serve as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local such as between foraging and nesting or denning areas, or they may be regional or “large-scale.” “Habitat linkages” are migration corridors that contain contiguous stands of native vegetation between source and receiver areas. Wildlife migration corridors are essential to the regional ecology of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

The Goleta Slough and its tributary streams may play an important role as migration/movement corridors for fish and wildlife species moving between the Pacific Ocean and coastal areas to the upper watersheds, and the wildlife habitats of the Santa Ynez Mountains (Padre Associates 2010). Riparian corridors provide cover and forage, and facilitate wildlife movement through developed areas such as that located north of the Goleta Slough. The Goleta Slough may also function as important habitat for bird species during migration through the Pacific Flyway. Goleta Point is known for providing views of northward seabird migration in spring.

There are currently no barriers to fish or aquatic species passage in San Jose Creek between the Pacific Ocean and upstream of the SR-217 bridge. According to Caltrans’ fish passage analysis (completed in November 2017), the existing bridge at SR-217 does not negatively affect fish passage conditions along San Jose Creek and the proposed bridge replacement will maintain existing fish passage characteristics. The existing and proposed conditions meet NMFS and CDFW fish passage criteria. A total fish passage barrier was present in San Jose Creek approximately 2,000 ft upstream of the bridge, over 1,000 ft outside of the project limits and BSA, where the stream channel was lined in concrete for at least 4,000 feet. In 2013, SBC Flood Control District replaced this with a wider and articulated concrete revetment bottom that includes fish passage weirs. The status of fish passage through this revetment is currently undetermined.

When the seasonal sandbar at Goleta Beach is breached, fish may migrate into Goleta Slough from the Pacific Ocean. When the sandbar is present, in-stream movements by resident fish are confined to the reaches of habitat upstream of the sandbar. Migration by western pond turtles may also be possible along the extent of these stream systems except for the most saline areas toward the ocean during the wet season. Wading and foraging birds are common throughout these streams and the coastal saltmarsh vegetation of the slough. Various birds may use fragmented riparian habitats for migration, foraging and likely nesting in some areas as well, although no nesting birds

have been observed in the BSA during surveys. Mammals may also forage along the stream corridors of the slough, as evidenced by observations of common raccoon tracks under the San Jose Creek Bridge and coyote sign throughout the BSA.

3.2. Federally Designated Critical Habitat

Figure 8 depicts currently designated critical habitat within the BSA. The BSA occurs within federally designated Critical Habitat for Southern California steelhead within the Calwater South Coast Hydrologic Unit 33153 and UCSB Slough Hydrologic Sub-area 331531 (DOC NOAA 2005). The BSA also occurs within the current designation of tidewater goby Critical Habitat, within unit SB – 9 Goleta Slough (DOI FWS 2013). The BSA does not occur within a designated Critical Habitat unit for any other federally listed species.

Federal fish and wildlife agencies consider the physical and biological features essential to the conservation of the species that may require special management considerations or protection. These must occur in the appropriate quantity and spatial arrangement essential to the conservation of the species. Critical Habitat and their physical and biological features are discussed further in Section 4.1.3 and 4.1.4.

3.3. Essential Fish Habitat (EFH)

EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. EFH includes all associated physical, chemical, and biological properties of aquatic habitat that are used by fish. The proposed project is within range of EFH for Pacific Coast Groundfish (PCG) and Coastal Pelagic Species Fishery Management Plans due to their proximity to the Pacific Ocean (PFMC 2005, PFMC 2018). According to NMFS, the uppermost extent of saltwater intrusion is the upper boundary of both these FMPs (see Section 2.4). The lateral boundary of EFH for PCG is the mean higher high water level (PFMC 2005), which is essentially the OHWM at this site. The limits of EFH for CPS is less clearly defined, but according to NMFS, is the same as PCG (see Section 2.4).

The PCG fishery includes approximately 90 groundfish species including rockfishes, flatfish, sharks, lingcod, sablefish, and other species. The EFH for PCG is located in the Conception Management Area of the PCG FMP. PCG EFH is identified as all waters and substrate within the following areas:

- Depths less than or equal to 3,500 meters (m) (= 1,914 fathoms) to mean higher high water level or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 parts per trillion during the period of average annual low flow.
- Seamounts in depths greater than 3,500 m as mapped in the EFH assessment geographic information system.
- Areas designated as habitat area of particular concern not already identified by the above criteria (PFMC 2005).

The CPS fishery includes four finfish (Pacific sardine, Pacific [chub] mackerel, northern anchovy, and jack mackerel) the invertebrate, market squid, and all euphausiid (krill) species that occur in the West Coast Exclusive Economic Zone (PFMC 2018). CPS finfish are pelagic (in the water column near the surface and not associated with substrate). Additional information on EFH within the BSA is presented in Section 4.1.5.

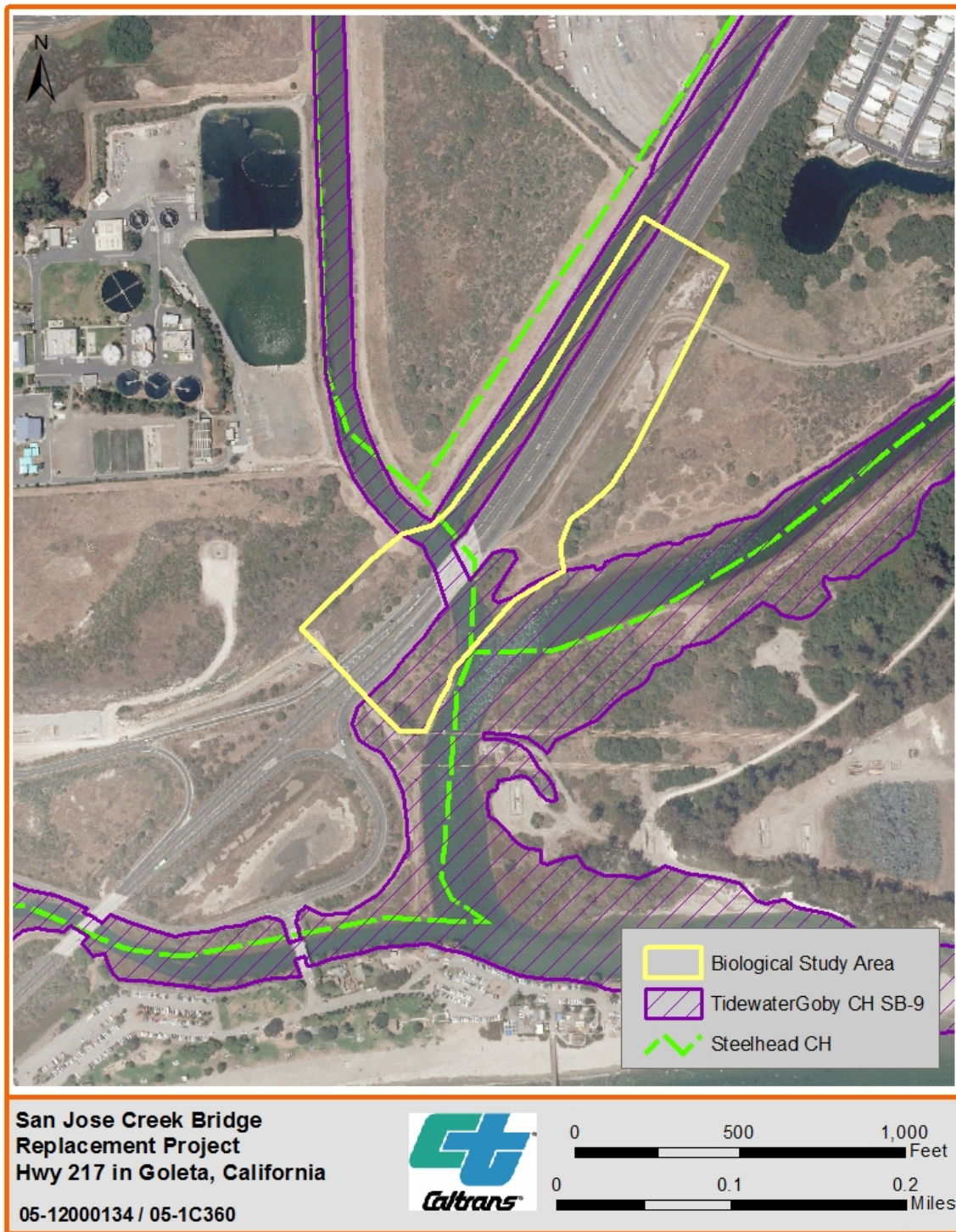


Figure 8. Designated Critical Habitat in the project area.

3.4. Invasive Species

A total of 35 terrestrial plant species included in the online Cal-IPC database (2018) were observed in the BSA (see Table 2). This equates to approximately 40% of all of the vascular plants observed in the BSA. Some are even dominants and characteristic of their plant community, as described above, including the three *Bromus* species, iceplant, and ngaio tree. Five species are also on the California noxious weed list (giant reed, onionweed, Italian thistle, Cape ivy, and Russian thistle), although only Italian thistle is relatively abundant in the BSA. No invasive aquatic species were observed in the BSA.

Table 2. Invasive Plants Observed in the BSA.

Common Name	Scientific Name	Cal-IPC Rating	Relative Density in BSA
giant reed	<i>Arundo donax</i>	High (Noxious Weed)	Low
onionweed	<i>Asphodelus fistulosus</i>	Moderate (Noxious Weed)	Low
slender wild oat	<i>Avena barbata</i>	Moderate	Low
common wild oat	<i>Avena fatua</i>	Moderate	Low
black mustard	<i>Brassica nigra</i>	Moderate	High
ripgut brome	<i>Bromus diandrus</i>	Moderate	High
soft chess brome	<i>Bromus hordeaceus</i>	Limited	High
red brome	<i>Bromus madritensis</i> ssp. <i>rubens</i>	High	Moderate
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate (Noxious Weed)	Moderate
Chilean sea fig	<i>Carpobrotus chilensis</i>	Moderate	Low
sea fig	<i>Carpobrotus edulis</i>	High	High
poison hemlock	<i>Conium maculatum</i>	Moderate	High
brass buttons	<i>Cotula coronopifolia</i>	Limited	Low
Cape ivy	<i>Delairea odorata</i>	High (Noxious Weed)	Low
red-stemmed filaree	<i>Erodium cicutarium</i>	Limited	Low
rattail sixweeks grass	<i>Festuca myuros</i>	Moderate	Low
Italian ryegrass	<i>Festuca perennis</i>	Moderate	Low
sweet fennel	<i>Foeniculum vulgare</i>	High	Low
bristly oxtongue	<i>Helminthotheca echioides</i>	Limited	Moderate
summer mustard	<i>Hirschfeldia incana</i>	Moderate	Low
burclover	<i>Medicago polymorpha</i>	Limited	Low
crystalline iceplant	<i>Mesembryanthemum crystallinum</i>	Moderate	Low
Small flowered iceplant	<i>Mesembryanthemum nodiflorum</i>	Limited	Low
ngaio tree	<i>Myoporum laetum</i>	Moderate	Moderate
tree tobacco	<i>Nicotiana glauca</i>	Moderate	Moderate
fountain grass	<i>Pennisetum setaceum</i>	Moderate	Moderate
Canary Island date palm	<i>Phoenix canariensis</i>	Limited	Low
English plantain	<i>Plantago lanceolata</i>	Limited	Moderate

Common Name	Scientific Name	Cal-IPC Rating	Relative Density in BSA
rabbitsfoot grass	<i>Polypogon monspeliensis</i>	Limited	Moderate
cultivated radish	<i>Raphanus sativus</i>	Limited	Low
castor bean	<i>Ricinus communis</i>	Limited	Low
curly dock	<i>Rumex crispus</i>	Limited	Low
Russian thistle	<i>Salsola tragus</i>	Limited (Noxious Weed)	Low
milk thistle	<i>Silybum marianum</i>	Limited	Low
London rocket	<i>Sisymbrium irio</i>	Moderate	Low

3.5. Regional Species and Habitats/Natural Communities of Concern

“Regional species” and “habitats of concern,” as used within this NES, are terms synonymous with “special-status” or “sensitive” species and habitats. Special-status species include taxa that are 1) federally or state listed as endangered, threatened, or rare; 2) candidates for federal or state listing as endangered, threatened or rare; 3) proposed for federal or state listing as endangered, threatened, or rare; or, 4) considered special concern species by the federal government (i.e., former USFWS Federal Species of Concern) and the CDFW (i.e., California Species of Special Concern [SSC] or those that appear on the CNDDDB Special Animals List, CDFW 2018b). Sensitive species also include taxa afforded protection or considered sensitive under various laws (e.g., NEPA, CEQA, FESA) or under sections of the CFGC (e.g., nesting birds), plants categorized with a California Rare Plant Rank by the California Native Plant Society (CNPS) (2018), and those taxa recognized as locally important or sensitive by the scientific community. Sensitive natural communities/habitats include those that are regulated or considered sensitive by federal, state, and/or local agencies or NEPA/CEQA.

The CNDDDB list in Appendix B reflects the most update database search on June 29, 2018 and Appendix C presents the most recent official federal species list received from USFWS and NMFS obtained for this NES (see Section 2.2 for more information). The complete lists of special status plants, animals, and sensitive natural communities developed from these database searches is presented in Table 3 for plants, Table 4 presents for animals, and Table 5 for habitats/natural communities of concern. For each taxon/community, these tables also include the regulatory status, a general description of the habitat requirements, a determination whether suitable habitat is present or absent in the BSA, and/or whether the BSA is located within a federally designated Critical Habitat unit. Chapter 4 provides more information on taxa/communities that may occur in the BSA or may be affected by the project.

Table 3. Regional Plant Species of Concern

Common / Scientific Name	Status Federal / State / CNPS	General Habitat Description	Habitat Present / Absent	Rationale
slender silver moss <i>Anomobryum julaceum</i>	-- / -- / 4.2	<ul style="list-style-type: none"> Moss; occurs in broadleaved upland forest, lower montane coniferous forest, and North Coast coniferous forest; on damp rock and soil on outcrops, usually on roadcuts Flowering: N/A 100-1000 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA, which is below the elevation range for the species. No further studies recommended.
Refugio manzanita <i>Arctostaphylos refugioensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial evergreen shrub; occurs in chaparral, sandstone substrate Flowers December-March 274-820 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA, which is below the elevation range for the species. No further studies recommended.
marsh sandwort <i>Arenaria paludicola</i>	FE / SE / 1B.1	<ul style="list-style-type: none"> Perennial herb; occurs in sandy areas and openings in marshes and swamps (freshwater or brackish) that are permanently wet or saturated to the surface. Flowers May-August 3-170 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA (wetlands are seasonally flooded). Not observed during floristic surveys. Effects determination is the project will have no effect on marsh sandwort. No further studies recommended.
Coulter's saltbush <i>Atriplex coulteri</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial herb; occurs on alkaline and clay soils in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland Flowers March-October 3-460 m 	HP	<ul style="list-style-type: none"> Marginal quality alkaline coastal scrub habitat occurs in some locations within the BSA. Not observed during floristic surveys. No further studies recommended.
Davidson's saltscale <i>Atriplex serenana</i> var. <i>davidsonii</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Annual herb; occurs on alkaline soils in coastal bluff scrub and coastal scrub Flowers April-October 10-200 m 	HP	<ul style="list-style-type: none"> Marginal quality alkaline coastal scrub habitat occurs in some locations within the BSA. Not observed during floristic surveys. No further studies recommended.
late-flowered mariposa-lily <i>Calochortus fimbriatus</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial bulbiferous herb; occurs in cismontane woodland, riparian woodland, and chaparral, often serpentinite. Flowers June-August 275-1,905 m 	A	<ul style="list-style-type: none"> Limited amount of riparian habitat occurs in the BSA but is below the elevation range for the species. No further studies recommended.

Common / Scientific Name	Status Federal / State / CNPS	General Habitat Description	Habitat Present / Absent	Rationale
Santa Barbara morning-glory <i>Calystegia sepium</i> ssp. <i>binghamiae</i>	-- / -- / 1A	<ul style="list-style-type: none"> Perennial rhizomatous herb; occurs in marshes and swamps (coastal); thought rediscovered in Chino, but rediscovered plant was described as a new taxon, <i>C. felix</i> in 2013 (CNPS 2018). Flowers August 0-220 m 	HP	<ul style="list-style-type: none"> Suitable habitat in the BSA, but the taxon is considered extinct in California (CNPS 2018). Not observed during floristic surveys. No further studies recommended.
southern tarplant <i>Centromadia parryi</i> ssp. <i>australis</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> Annual herb; occurs in margins of marshes and swamps, valley and foothill grassland (vernally mesic), and vernal pools Flowers May-November 0-480 m 	HP	<ul style="list-style-type: none"> Suitable habitat in the BSA. Not observed during floristic surveys. No further studies recommended.
saltmarsh bird's-beak <i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	FE / SE / 1B.2	<ul style="list-style-type: none"> Annual herb (hemiparasitic, not host-specific); occurs in coastal dunes and marshes and swamps (coastal salt) Flowers May-October 0-30 m 	HP	<ul style="list-style-type: none"> Suitable habitat in the BSA. Not observed during floristic surveys. Effects determination is the project will have no effect on saltmarsh bird's-beak. No further studies recommended.
umbrella larkspur <i>Delphinium umbraculorum</i>	-- / -- / 1B.3	<ul style="list-style-type: none"> Perennial herb; occurs in cismontane woodland and chaparral Flowers April-June 400-1,600 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA, which is below the elevation range for the species. No further studies recommended.
Ojai fritillary <i>Fritillaria ojaiensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial bulbiferous herb; occurs in rocky soils in broadleaved upland forest (mesic), chaparral, cismontane woodland; lower montane coniferous forest; rocky Flowers February-May 225-998 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA, which is below the elevation range for the species. No further studies recommended.
mesa horkelia <i>Horkelia cuneata</i> var. <i>puberula</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> Perennial herb; occurs in sandy or gravelly openings in maritime chaparral, cismontane woodland and coastal scrub Flowers Feb-July 400-1,600 m 	A	<ul style="list-style-type: none"> Marginal coastal scrub habitat occurs in some locations within the BSA, but is below the elevation range for the species. No further studies recommended.
Santa Lucia dwarf rush <i>Juncus luciensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Annual herb; occurs in chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, and vernal pools Flowers April-July 300-2,040 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA, which is below the elevation range for the species. No further studies recommended.

Common / Scientific Name	Status Federal / State / CNPS	General Habitat Description	Habitat Present / Absent	Rationale
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE, CH / -- / 1B.1	<ul style="list-style-type: none"> Annual herb; occurs in mesic areas in cismontane woodland, playas (alkaline), valley and foothill grassland, and vernal pools Flowers March-June 0-470 m 	A	<ul style="list-style-type: none"> Marginal alkaline playa habitat occurs in the BSA but species presumed extirpated south of Monterey area (CNPS 2018). Effects determination is the proposed project will have no effect on Contra Costa goldfields or Critical Habitat. No further studies recommended.
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> Annual herb; occurs in marshes and swamps (coastal salt), playas, and vernal pools Flowers February-June 1-1,220 m 	A	<ul style="list-style-type: none"> Suitable habitat in the BSA. Not observed during floristic surveys. No further studies recommended.
pale-yellow layia <i>Layia heterotricha</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> Annual herb; alkaline or clay soils; occurs in cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland Flowers March-June 300-1,705 m 	A	<ul style="list-style-type: none"> Marginal coastal scrub habitat occurs in some locations within the BSA, but is below the elevation range for the species. No further studies recommended.
Santa Barbara honeysuckle <i>Lonicera subspicata</i> var. <i>subspicata</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial evergreen shrub; occurs in cismontane woodland, chaparral, and coastal scrub Flowers May-August 10-1,000 m 	A	<ul style="list-style-type: none"> Suitable habitat in the BSA. Not observed during floristic surveys. No further studies recommended.
Carmel Valley malacothrix <i>Malacothrix saxatilis</i> var. <i>arachnoidea</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial rhizomatous herb; occurs in chaparral (rocky soils) and coastal scrub Flowers March-December 25-1,036 m 	A	<ul style="list-style-type: none"> Marginal coastal scrub habitat occurs in some locations within the BSA, but is below the elevation range for the species. No further studies recommended.
white-veined monardella <i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i>	-- / -- / 1B.3	<ul style="list-style-type: none"> Perennial evergreen shrub; occurs in chaparral and cismontane woodland Flowers April-December 50-1,525 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA. No further studies recommended
Gambel's watercress <i>Nasturtium gambelii</i>	FE / ST / 1B.1	<ul style="list-style-type: none"> Perennial, rhizomatous herb; occurs in marshes and swamps (freshwater or brackish) Flowers April-October 5-330 m 	HP	<ul style="list-style-type: none"> Suitable habitat in the BSA. Not observed during floristic surveys. Effects determination is the project will have no effect on Gambel's watercress. No further studies recommended.

Common / Scientific Name	Status Federal / State / CNPS	General Habitat Description	Habitat Present / Absent	Rationale
Mexican earthmoss <i>Pleuridium mexicanum</i>	-- / -- / 2B.1	<ul style="list-style-type: none"> Moss; collected in 2006 from chaparral in Santa Ynez Mountains (Los Padres National Forest); found growing on intermittently seepy bench of decomposed sandstone in chaparral Flowering: N/A ≈440 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA, which is below the elevation range for the species. No further studies recommended
Nuttall's scrub oak <i>Quercus dumosa</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> Perennial evergreen shrub; sandy clay loam; occurs in closed-cone coniferous forest, chaparral, and coastal scrub Flowers February-August 15-400 m 	A	<ul style="list-style-type: none"> Marginal coastal scrub habitat occurs in some locations within the BSA, but is below the elevation range for the species. No further studies recommended.
black-flowered figwort <i>Scrophularia atrata</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial herb. Occurs in closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, riparian scrub; sand, diatomaceous shales; around dune swales Flowers March-July 10-500 m 	HP	<ul style="list-style-type: none"> Suitable habitat in the BSA. Not observed during floristic surveys; the common California figwort (<i>S. californica</i>) was observed. No further studies recommended.
estuary seablite <i>Suaeda esteroa</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Perennial herb; occurs in marshes and swamps (coastal salt) Flowers May-January 0-5 m 	A	<ul style="list-style-type: none"> Suitable habitat in the BSA. Not observed during floristic surveys. No further studies recommended.
Sonoran maiden fern <i>Thelypteris puberula</i> var. <i>sonorensis</i>	-- / -- / 2.2	<ul style="list-style-type: none"> Perennial, rhizomatous herb; occurs in meadows and seeps ID period: January-September 50-610 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA. No further studies recommended.
Santa Ynez false lupine <i>Thermopsis macrophylla</i>	-- / SR / 1B.3	<ul style="list-style-type: none"> Perennial, rhizomatous herb; occurs in chaparral Flowers April-June 425-1,400 m 	A	<ul style="list-style-type: none"> No suitable habitat in the BSA, which is below the elevation range for the species. No further studies recommended.

Status Codes:

Federal:

FE = Federal Endangered

FT = Federal Threatened

State:

SE = State Endangered

ST = State Threatened

SR = State Rare

California Native Plant Society (CNPS):

List 1B = rare, threatened, or endangered in California and elsewhere.

List 2 = rare, threatened, or endangered in California, but more common elsewhere.

List 4 = limited distribution (Watch List).

CNPS Threat Code:

.1 = Seriously endangered in CA (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 = Fairly endangered in CA (20-80% occurrences threatened)

.3 = Not very endangered in CA (<20% of occurrences threatened or no current threats known)

Habitat Present/Absent

Absent [A]-no habitat present and no further work needed. **Habitat Present [HP]**-habitat is, or may be present. **Present [P]**-the species is present. **Critical Habitat [CH]** – located within a designated Critical Habitat unit, but does not necessarily mean that appropriate habitat is present.

Table 4. Regional Animal Species of Concern

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
Invertebrates				
obscure bumble bee <i>Bombus caliginosus</i>	-- / -- / SA	Coastal areas from SBC to north to Washington State. Food plant genera include <i>Baccharis</i> , <i>Cirsium</i> , <i>Lupinus</i> , <i>Lotus</i> , <i>Grindelia</i> , and <i>Phacelia</i> .	HP	<ul style="list-style-type: none"> • Marginal habitat in BSA. • No bumble bee taxa were observed in BSA. • Food plant genera will be included in restoration seed mixes as mitigation.
Crotch bumble bee <i>Bombus crotchii</i>	-- / -- / SA	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include <i>Anitrrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	HP	<ul style="list-style-type: none"> • Low quality habitat BSA due to limited occurrences of food plant genera. • No bumble bee taxa were observed in BSA. • Food plant genera will be included in restoration seed mixes as mitigation.
vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT, CH / -- / --	Vernal pools, usually less than 0.05 ac in size; swales or basalt flow depression pools in unplowed grasslands.	A	<ul style="list-style-type: none"> • No suitable habitat in/near BSA; no Critical Habitat in BSA. • Effects determination is the project will have no effect on vernal pool fairy shrimp or its Critical Habitat. • No further studies recommended
sandy beach tiger beetle <i>Cicindela hirticollis grvida</i>	-- / -- / SA	Inhabits areas adjacent to non-brackish water along the coast of California. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand.	A	<ul style="list-style-type: none"> • No suitable habitat in the BSA. • No further studies recommended.
globose dune beetle <i>Coelus globosus</i>	-- / -- / SA	Inhabitant of coastal sand dune habitat. Inhabits foredunes and sand hummocks; burrows beneath the sand surface and beneath dune vegetation.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • No further studies recommended.
monarch butterfly - California overwintering population <i>Danaus plexippus</i>	-- / -- / SA	Winter roost sites extend along the coast from northern Mendocino to Baja California. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	A	<ul style="list-style-type: none"> • No suitable overwintering sites in/near the BSA • Nearest known overwintering sites are located approximately 0.3 mile east of the BSA in eucalyptus trees along Atascadero Creek (CNDDB 2018). • No further studies recommended.
black abalone <i>Haliotis cracherodii</i>	FE, CH / -- / --	Rocky intertidal and subtidal reefs along the California and Baja California coast, attach to rocks and other hard surfaces using their muscular foot.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Effects determination is the project will have no effect on black abalone or its Critical Habitat. • No further studies recommended.

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
white abalone <i>Haliotis sorenseni</i>	FE / -- / --	Rocky substrates alongside sand channels, which tend to accumulate the algae they eat. They are usually found at depths of 50 to 180 feet.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Effects determination is the project will have no effect on white abalone. No further studies recommended.
mimic tryonia <i>Tryonia imitator</i>	-- / -- / SA	Inhabits coastal lagoons, estuaries and salt marshes. Found only in permanently submerged areas in a variety of sediment types. Able to withstand a wide range of salinities.	A	<ul style="list-style-type: none"> Suitable habitat in BSA. Not observed in BSA. Avoidance and minimization measures recommended.
Fish				
steelhead - southern California distinct population segment (DPS) <i>Oncorhynchus mykiss irideus</i>	FE, CH / -- / SSC	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	HP	<ul style="list-style-type: none"> Suitable habitat and Critical Habitat occurs in all the streams of Goleta Slough, including San Jose Creek in the BSA. Observed in San Pedro Creek in 1990s (ESA Associates 2015). Species is inferred to occur within the BSA. Effects determination is the project may affect, and is likely to adversely affect, Southern California steelhead and its Critical Habitat. Avoidance and minimization measures recommended.
Southern DPS green sturgeon <i>Acipense medrostris</i>	FT, CH / - / -	Bays and estuaries Mexico to Alaska, marine depths 65 to 230 ft; only spawning habitat in California is Sacramento River basin.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Effects determination is the project will have no effect on green sturgeon or its Critical Habitat. No further studies recommended.

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
tidewater goby <i>Eucyclogobius newberryi</i>	FE, CH / -- / SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches. Needs still but not stagnant water and high oxygen.	HP	<ul style="list-style-type: none"> Suitable habitat occurs in San Jose Creek and other streams in the vicinity of the BSA; no Critical Habitat in BSA. Observed in Goleta Slough in 2013 (ESA Associates 2015). Species is inferred to occur within the BSA. Effects determination is the project may affect, and is likely to adversely affect, tidewater goby but will have no effect to Critical Habitat. Avoidance and minimization measures recommended.
Amphibians				
California red-legged frog <i>Rana draytonii</i>	FT, CH / -- / SSC	Aquatic habitats with little or no flow, presence of surface water to at least early June, surface water depths to at least 27.6 inches, and presence of sturdy underwater supports such as cattails.	HP	<ul style="list-style-type: none"> Suitable habitat potentially along San Jose Creek and other streams in the vicinity of the BSA, but USFWS has indicated that the species does not occur in Goleta Slough (pers. comm., Yang 2016); no Critical Habitat in the BSA. Effects determination is the project will have no effect on California red-legged frog or its Critical Habitat. No further studies recommended.
Reptiles				
western pond turtle <i>Emys marmorata</i>	-- / -- / SSC	Quiet waters of ponds, lakes, streams, and marshes. Typically in the deepest parts with an abundance of basking sites. Nests in nearby grasslands.	HP	<ul style="list-style-type: none"> Suitable habitat occurs in San Jose Creek and other streams in the vicinity of the BSA. Observed in Atascadero Creek, 1 mile east in 2015 (CNDDDB 2018). Not observed during surveys but the species is inferred to occur within the BSA. Avoidance and minimization measures recommended.
FESA sea turtles (see Appendix C)	FT, FE / -- / --	Marine reptiles temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans, breed on certain areas of the U. S. Coast.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Effects determination is the project will have no effect on FESA sea turtles. No further studies recommended

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
Birds				
Cooper's hawk <i>Accipiter cooperii</i>	-- / -- / WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	HP	<ul style="list-style-type: none"> • Low quality nesting habitat in trees in the BSA; high quality nesting habitat nearby. • Not observed during surveys. • Avoidance and minimization measures recommended.
tricolored blackbird <i>Agelaius tricolor</i>	-- / SCE / SSC	Highly colonial species; most numerous in the Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate (dense stands of cattails or tules), and foraging area with insect prey within a few kilometers of the colony.	A	<ul style="list-style-type: none"> • No suitable nesting habitat in/near the BSA. • CNDDDB nesting records in San Goleta Slough, but no nesting tricolored blackbirds have been observed in these areas since 1983 (CNDDDB 2018). • Not observed during surveys. • No further studies recommended.
grasshopper sparrow <i>Ammodramus savannarum</i>	-- / -- / SSC	Open grasslands and prairies with patches of bare ground. Builds a grass nest on the ground, concealed nests with overhanging grasses. Forages for insects on the ground.	HP	<ul style="list-style-type: none"> • Potential nesting habitat in the BSA. • Not observed during surveys. • Avoidance and minimization measures recommended.
marbled murrelet <i>Brachyramphus marmoratus</i>	FT, CH / SE / --	Feeds near-shore; nests inland along coast from Eureka to Oregon border & from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	A	<ul style="list-style-type: none"> • No suitable habitat or Critical Habitat in/near the BSA. • Effects determination is the project will have no effect on marbled murrelet or its Critical Habitat. • No further studies recommended.
ferruginous hawk <i>Buteo regalis</i>	-- / -- / WL	Inhabits open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats. Nests on low cliffs, buttes, cut banks, shrubs, trees, or in other elevated structures, natural or human-made.	A	<ul style="list-style-type: none"> • No suitable habitat in BSA. • No further studies recommended.

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT, CH / -- / SSC	Sandy marine and estuarine shores.	HP	<ul style="list-style-type: none"> • Very low quality nesting habitat in/near BSA; no Critical Habitat in BSA. • Past records in Goleta Slough but considered extirpated at this location (CNDDDB 2018). • Not observed during surveys. • Effects determination is the project will have no effect on western snowy plover or its Critical Habitat. • No further studies recommended.
white-tailed kite <i>Elanus leucurus</i>	-- / 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. Nests in upper 1/3 of trees.	HP	<ul style="list-style-type: none"> • Marginal nesting habitat in trees in BSA. • Not observed during surveys. • Avoidance and minimization measures recommended.
southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	FE, CH / SE / --	Inhabits riparian woodlands in southern California. For nesting, requires dense riparian habitats (cottonwood/willow and tamarisk vegetation). Habitat not suitable for nesting may be used for migration and foraging.	HP	<ul style="list-style-type: none"> • Very low quality nesting habitat in/near BSA; no Critical Habitat in BSA. • No known nearby records. • Not observed during surveys. • Effects determination is the project will have no effect to southwestern willow flycatcher or its Critical Habitat. • No further studies recommended.
horned lark <i>Eremophila alpestris aelia</i>	-- / --/ WL	Occurs in short grass prairies, coastal plains, fallow grain fields and alkali flats; coastal regions from Sonoma to San Diego county, and west to the San Joaquin Valley. Nests on the open ground, typically in areas where trees and large shrubs are absent.	HP	<ul style="list-style-type: none"> • No suitable nesting habitat in the BSA. • Past breeding records at Santa Barbara airport and UCSB (ESA Associates 2015). • Not observed during surveys. • Avoidance and minimization measures recommended.
yellow breasted chat <i>Icteria virens</i>	-- / -- / SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	HP	<ul style="list-style-type: none"> • Marginal nesting habitat in trees in the BSA. • Not observed during surveys. • Avoidance and minimization measures recommended.

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
Belding's savannah sparrow <i>Passerculus sandwichensis beldingi</i>	-- / SE / --	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in pickleweed near margins of tidal flats.	HP	<ul style="list-style-type: none"> • Marginal nesting habitat in the BSA. • Known to nest in Goleta Slough (ESA Associates 2015). • Not observed during surveys. • Avoidance and minimization measures recommended. • Impact determination is that the project will not impact Belding's savannah sparrow.
light-footed clapper rail <i>Rallus longirostris levipes</i>	FE / SE / --	Found in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation. Requires dense growth of either pickleweed or cordgrass for nesting or escape cover, feeds on mollusks and crustaceans.	HP	<ul style="list-style-type: none"> • Marginal nesting habitat in coastal salt marsh in the BSA. • Historic nesting records in Goleta Slough and considered extirpated (CNDDB 2018). • Effects determination is the project will have no effect on light-footed clapper rail. • No further studies recommended.
bank swallow <i>Riparia riparia</i>	-- / ST / --	Colonial nester; nests primarily in riparian and other lowland habitats. Requires vertical banks/cliffs with fine-textured/sand soils to dig nesting hole.	A	<ul style="list-style-type: none"> • No suitable nesting habitat in/near the BSA. • No further studies recommended.
yellow warbler <i>Setophaga petechia</i>	-- / -- / SSC	Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging. Also nests in montane shrubbery in open conifer forests.	HP	<ul style="list-style-type: none"> • Marginal nesting habitat in trees in the BSA. • Not observed during surveys. • Avoidance and minimization measures have been recommended.
California least tern <i>Sterna antillarum browni</i>	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.	HP	<ul style="list-style-type: none"> • Low quality nesting habitat in the BSA. • No records in Goleta Slough or vicinity (CNDDB 2018). • Effects determination is the project will have no effect on California least tern. • No further studies recommended.
least Bell's vireo <i>Vireo bellii pusillus</i>	FE, CH / SE / -	Summer resident of southern California in low riparian habitats near water or in dry river bottoms, below 2,000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willows, coyote brush, or mesquite.	HP	<ul style="list-style-type: none"> • Very low quality nesting habitat in/near BSA; no Critical Habitat in BSA. • No known nearby records. • Not observed during surveys. • Effects determination is the project will have no effect to least Bell's vireo or its Critical Habitat. • No further studies recommended.

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
Mammals				
pallid bat <i>Antrozous pallidus</i>	-- / -- / SSC	Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging, near water; often associated with open, sparsely vegetated grasslands. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Night roosts may be in more open sites, such as porches and buildings.	A	<ul style="list-style-type: none"> • No suitable roosting habitat in the BSA • No evidence of bat roosting was found under the SR-217 bridge. • No further studies recommended.
Guadalupe fur seal <i>Arctocephalus townsendi</i>	FT, MMPA / -- / --	Occurs in nearshore marine environments of the Pacific Ocean. Breed on Guadalupe Island in Mexico and on Channel Islands of Southern California.	A	<ul style="list-style-type: none"> • Not known or expected to occur in mainland waters. • Effects determination is the project will have no effect on ESA whales. • No further studies recommended.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	-- / -- / SSC	Throughout California in a variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Sensitive to human disturbance.	A	<ul style="list-style-type: none"> • No suitable roosting habitat in the BSA • No evidence of bat roosting was found under the SR-217 bridge. • No further studies recommended.
western mastiff bat <i>Eumops perotis californicus</i>	-- / -- / SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	A	<ul style="list-style-type: none"> • No suitable roosting habitat in the BSA • No evidence of bat roosting was found under the SR-217 bridge. • No further studies recommended.
big free-tailed bat <i>Nyctinomops macrotis</i>	-- / -- / SSC	Low-lying arid areas in southern California. Needs high cliffs or rocky outcrops for roosting. Feeds principally on large moths.	A	<ul style="list-style-type: none"> • No suitable roosting habitat in the BSA • No evidence of bat roosting was found under the SR-217 bridge. • No further studies recommended.
southern sea otter <i>Enhydra lutris</i>	FT, MMPA / -- / FP	Occurs in nearshore marine environments from Año Nuevo, San Mateo County to Point Sal, SBC. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	A	<ul style="list-style-type: none"> • No suitable habitat in BSA. • Effects determination is the project will have no effect on southern sea otter. • No further studies recommended.

Common / Scientific Name	Status Federal / State / CDFW	General Habitat Description	Habitat Present / Absent	Rationale
Other FESA and MMPA marine mammals	FE, MMPA / -- / --	Occur in deep water marine environments of the Pacific and other oceans.	A	<ul style="list-style-type: none"> • No suitable habitat in BSA. • The mouth of Goleta Slough is not large enough for access by Cetaceans. • Pinnepeds are not known to use Goleta Beach and observations are extremely rare in Goleta Slough. • Effects determination is the project will have no effect on ESA and MMPA whales(Cetaceans) and Pinnipeds. • No further studies recommended

Status Codes:**Federal:**

FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
FD = Federal Delisted
MMPA = Marine Mammal Protection Act

State:

SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SD = State Delisted
FP = Fully Protected

California Department of Fish and Wildlife:

SSC = California Species of Special Concern
WL = CDFW Watch List species
SA = Included on CNDDDB Special Animals List (also protected under CEQA)

Habitat Present/Absent

Absent [A]-no habitat present and no further work needed. **Habitat Present [HP]**-habitat is, or may be present. **Present [P]**-the species is present. **Critical Habitat [CH]** – the project footprint is located within a designated Critical Habitat unit, but does not necessarily mean that appropriate habitat is present.

Table 5. Regional Habitats of Concern

Habitat/Natural Community	Status Federal / State / Local	Habitat/Natural Community Description	Habitat Present/Absent	Rationale
Southern Coastal Salt Marsh	WOTUS / WOTS, S2.1 / ESHA	Highly productive, herbaceous and suffrutescent, salt-tolerate hydrophytes forming dense cover and up to 1 m tall. Usually found along sheltered inland margins of bays, lagoons, and estuaries from about Point Conception to the Mexican border (Holland 1986). SBC Wetland and Native Plant Community ESHA.	HP	<ul style="list-style-type: none"> Occurs in the BSA (= Pickleweed Mats). Avoidance and minimization measures recommended.
Pickleweed Mats	WOTUS / WOTS, S3 / ESHA	Commonly called "Pickleweed Mats"; a subset of Southern Coastal Salt Marsh; see Section 3.1.3.1.	HP	<ul style="list-style-type: none"> Occurs in the BSA. SBC Wetland and Native Plant Community ESHA. Avoidance and minimization measures recommended.
Quailbush Scrub	-- / WOTS / ESHA	See Section 3.1.3.4.	HP	<ul style="list-style-type: none"> Occurs in the BSA. SBC Native Plant Community ESHA and riparian buffer for SBC Stream Habitat ESHA. Avoidance and minimization measures recommended.
Arroyo Willow Thickets	-- / WOTS / ESHA	See Section 3.1.3.6.	HP	<ul style="list-style-type: none"> Occurs in the BSA. SBC Native Plant Community ESHA and riparian buffer for SBC Stream Habitat ESHA. Avoidance and minimization measures recommended.
Perennial Stream	EFH, CH, WOTUS / WOTS / ESHA	See Sections 3.1.2.2, 3.2, 3.3, and 4.1.	HP	<ul style="list-style-type: none"> Occurs in the BSA. Steelhead and Tidewater goby Critical Habitat EFH for PCG and CPS. SBC Stream ESHA. Avoidance and minimization measures recommended.

Status Codes:

Federal:

CH = Designated Critical Habitat

EFH = Essential Fish Habitat

WOTUS = Waters of the U. S.

State:

WOTS = Waters of the State.

S1 - State Rank 1, Critically Imperiled — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

S2 - State Rank 2, Imperiled — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.

S3 - State Rank 3, Vulnerable — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

Sx.1, .2, or .3 - Sx.1 indicates very threatened status, Sx.2 indicates moderate threat, and Sx.3 indicates few or no current known threats.

Local (Santa Barbara County):

ESHA = Environmentally Sensitive Habitat Area

Habitat Present/Absent:

Absent [A] - no habitat present and no further work needed.

Habitat Present [HP] - habitat is, or may be present.

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

4.1. Protected Habitats and Jurisdictional Areas

Impacts to protected habitats and jurisdictional areas within the project BSA have been quantified based on ground disturbance, streambed disturbance, and vegetation disturbance/removal. These impact areas are a subset of the BSA and represent the Area of Potential Impact (API). The API includes the maximum amount of potential disturbance areas for both permanent and temporary impacts associated with construction of the project (including the proposed work area, bridge structures at ground or streambed level, areas of cut and fill, staging, access, and temporary dewatering). Estimated impacts to protected habitats (including natural communities of concern) and jurisdictional areas are quantified in Table 6, shown in Figures 9 and 10, and described in the following subsections.

Table 6. Impacts to Protected Habitats and Jurisdictional Areas

Protected Habitat/Jurisdictional Area	Alternative 1 (both Design Variations)	
	Permanent Impacts (ac)	Temporary Impacts (ac)
Wetlands (Pickleweed Mats/Southern Coastal Salt Marsh) ¹	0.038	0.142
Perennial Stream ² , Steelhead and Tidewater Goby Critical Habitat, and Pacific Coast Groundfish and Coastal Pelagic EFH	<0.001	0.711
Ephemeral Drainage ³	0.014	0.028
Riparian ⁴	0.020	0.050
Non-Riparian Streambank ⁵	0.131	0.198
Total USACE Jurisdiction ⁶	0.038	0.853
Total RWQCB Jurisdiction ⁷	0.203	1.129
Total CDFW Jurisdiction ⁸	0.165	0.987
Total CCC ESHAs ⁹	0.057	0.903
¹ The only type of 3-parameter wetlands in the BSA. ² Below the OHWM. ³ Comprised of roadside ditches. ⁴ Comprised of Quailbush Scrub and Arroyo Willow Thickets plant communities. ⁵ Between the OHWM and top of bank, excluding Riparian habitats. ⁶ Includes Wetlands and Other Waters (=Perennial Stream). ⁷ Includes Wetlands, Perennial Stream, Ephemeral Drainage, Riparian and Unvegetated Streambank, some of which overlap with USACE jurisdiction. ⁸ Includes Perennial Stream, Ephemeral Drainage, Riparian and Unvegetated Streambank, some of which overlap with USACE jurisdiction. ⁹ Includes Wetlands (Pickleweed Mat/Southern Coastal Saltmarsh), Perennial Stream, and 1-parameter wetlands in Riparian habitats (Quailbush Scrub and Arroyo Willow Thickets).		

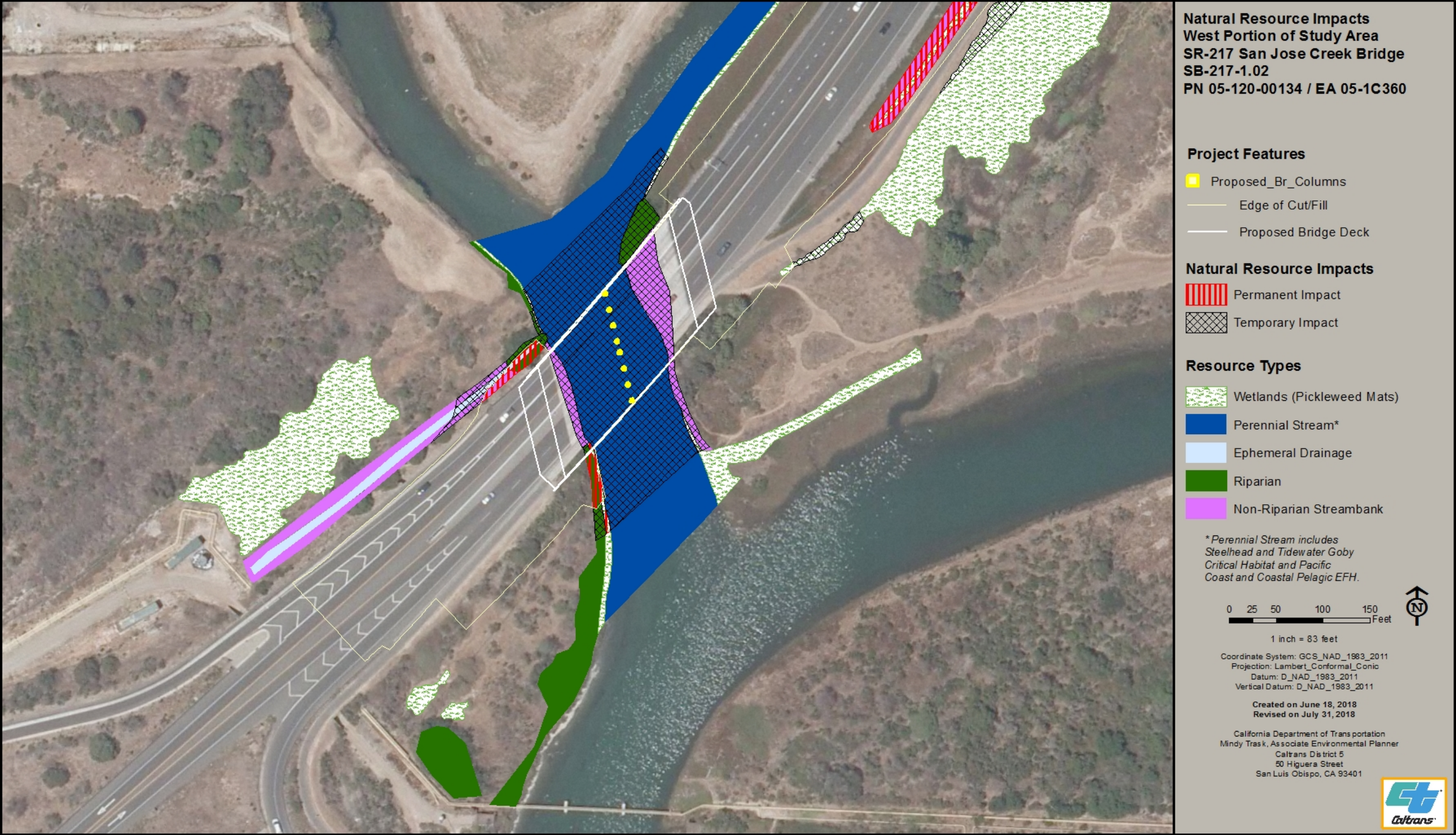


Figure 9. Potential impacts to protected habitats and jurisdictional areas (western portion of the BSA).



Figure 10. Potential impacts to protected habitats and jurisdictional areas (eastern portion of the BSA).

A minor amount of permanent impacts to protected habitats and jurisdictional areas will result from installation of the middle pier, end abutments, and reconstruction of the bicycle/pedestrian path. Temporary impacts will occur throughout the overall work area resulting from temporary dewatering, vegetation trimming, construction disturbance beyond fill slopes and other work areas, and equipment access and staging. Sources of impacts will be primarily from the use of construction equipment and associated worker foot-traffic.

ESA fencing will be installed along the maximum disturbance limits to minimize disturbance to habitats/vegetation. Special Provisions for the installation of ESA fencing and silt fencing will be included in the Construction Contract and will be identified on the project plans. Prior to the start of construction activities, ESA areas will be delineated in the field and will be approved by the Caltrans environmental division.

4.1.1. Discussion of Jurisdictional Wetlands, Other Waters, and Riparian Habitat

Jurisdictional wetlands, other waters, and riparian habitat are regulated by USACE, RWQCB, CDFW, and the CCC (administered by SBC in the project area), as described in Section 2.1. Wetlands function to improve water quality, detain storm water runoff, recharge groundwater, and provide wildlife habitat. Riparian habitat along streams provides wildlife habitat, insects for food for aquatic species, and shade and cover for aquatic species which helps regulated stream temperature.

4.1.1.1. SURVEY RESULTS

Potential jurisdictional areas were delineated in the BSA as described in Section 2.2, and are summarized in Table 7 and shown on Figure 11. Waters of the U. S. delineated within the BSA include a total of 2.566 ac of CWA wetlands and a total of 1.932 ac of “other waters” (Perennial Stream) below the OHWM in San Jose Creek. Waters of the state within the BSA includes waters of the U. S., as well as a total of 0.140 ac of Ephemeral Drainage, 0.542 ac of non-wetland riparian habitat, and 0.469 ac of unvegetated streambank were (above the OHWM).

Table 7. Jurisdictional Areas within the BSA, by Authority.

Agency	Jurisdictional Areas	Area in Square Feet (ft ²)	Area in Acres (ac)	Linear Feet
USACE	CWA Wetlands ¹	111,790	2.566	1,967
	Other Waters (Perennial Stream) ²	84,139	1.932	1,460
	Total USACE Jurisdiction	195,928	4.498	3,427
RWQCB	CWA Wetlands ¹	111,790	2.566	1,967
	Perennial Stream	84,139	1.932	1,460
	Ephemeral Drainage	6,077	0.140	985
	Other (non-riparian) Streambank ³	20,430	0.469	2,232
	Other Riparian	23,627	0.542	647

Agency	Jurisdictional Areas	Area in Square Feet (ft ²)	Area in Acres (ac)	Linear Feet
	Total RWQCB Jurisdiction⁴	246,062	5.649	7,291
CDFW	Streambed	90,215	2.071	2,445
	Streambank	20,430	0.469	2,232
	Associated Riparian	23,627	0.542	647
	Total CDFW Jurisdiction⁵	134,272	3.082	5,324
CCC	ESHA 1 - CWA Wetland Habitat	111,790	2.566	1,967
	ESHA 2 - Other Wetlands (1-parameter = Riparian)	23,627	0.542	647
	ESHA 3 - Stream Habitat (=Perennial Stream)	84,139	1.932	1,460
	Total CCC Jurisdiction⁶	219,555	5.040	4,074
¹ USACE jurisdictional wetlands are in areas along and/or adjacent to waters of the U. S. that support all three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology). ² USACE waters of the U. S. are considered “Other Waters”. located at or below the OHWM and lack one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and/or wetland hydrology). ³ Other Streambank includes areas above the OHWM that lack riparian vegetation. ⁴ RWQCB jurisdiction includes USACE jurisdiction plus Other Streambank and Other Riparian. ⁵ CDFW jurisdiction extends from the channel bed to the tops of banks or outer edge of riparian canopy (whichever is greater). ⁶ CCC jurisdiction areas meet the criteria for Environmentally Sensitive Areas (EHSAs).				

Ephemeral Drainage features were found in drainage ditches along SR-217. Although they do not meet the current definition of waters of the U. S., the RWQCB and CDFW tend to classify roadside ditches as waters of the state because they transport surface water, even if only during storm events (unpublished power point presentation by the State Water Resources Control Board). The only habitats that met the CWA definition of wetlands (three parameters) within the project area are within the Pickleweed Mats/Southern Coastal Saltmarsh community, under the jurisdiction of all agencies except CDFW, described in Section 3.1.3.1. Although some of the Pickleweed Mats in the BSA are somewhat disconnected from the stream channel, they are classified as wetlands as regulated by the CWA here because it is clear from historical maps that these low-lying areas were historically connected to the Goleta Slough complex. As described in Section 2.1.1.2, the USACE will decide jurisdiction of certain types of “waters” on a case-by-case basis.

The only “single parameter” wetlands under the jurisdiction of the CCC are the riparian areas, as they are dominated by either arroyo willow or quailbush (reflected in the “riparian” category). All of the potential CCC ESHAs in the BSA are represented as:

- CWA wetlands (= the Pickleweed Mat/Southern Coastal Saltmarsh native plant community),
- Other wetlands (1- parameter wetlands that are only in the riparian habitats (Quailbush Scrub and Arroyo Willow Thickets native plant communities), and
- Stream habitat (= Perennial Stream).

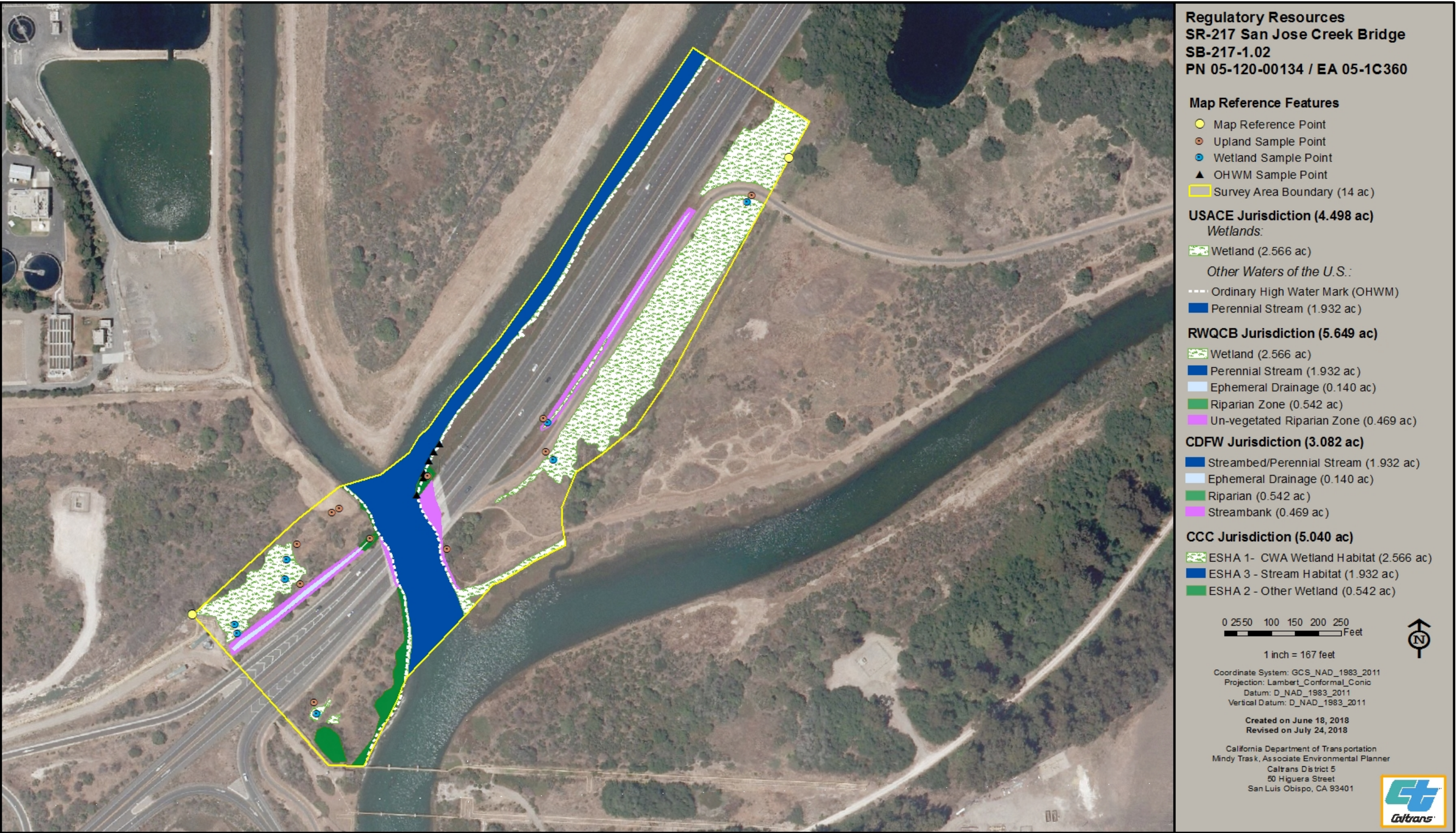


Figure 11. Jurisdictional resources in the BSA.

None of the other plant communities in the BSA are representative of native plant communities, and the ephemeral drainage and associated “streambanks” are restricted to the roadside ditches, which are not representative of stream habitats protected by the CCC. There are no other CCC ESHAs in the BSA. As described in Section 3.1.3.2, the Non-native Grassland community mapped in the BSA includes several isolated and small patches of glasswort and alkali heath. These were not mapped as distinct plant communities or considered single-parameter ESHA wetlands due to their small size.

Field indicators of the OHWM matched the 7 ft flood elevation. This is similar to the highest high tide elevations over the past few years that the USACE requested Caltrans use as the OHWM (6.8 ft) (see Section 2.4). The upper limit of waters of the State is the top of bank or edge of the riparian zone (vegetated or not), whichever is greater, as shown on Figure 11. The only portion of the BSA where the top of bank is not shown is the portion of San Jose Creek parallel to the north side of SR-217, beyond the small riparian area near the bridge. Here, the top of bank is essentially the same as the OHWM due to steepness of the slope.

A Jurisdictional Determination Report will be prepared that describes the study methods, locations of sample points, results of the wetland delineation and jurisdictional waters assessment. Wetland delineation and OHWM data forms will be provided in the Jurisdictional Determination Report.

4.1.1.2. PROJECT IMPACTS

Estimates of permanent and temporary impacts to potentially jurisdictional wetlands, other waters and riparian habitat are presented in Table 6. These impacts were determined by overlaying the project API with the preliminary jurisdictional determination map, as shown on Figure 9. There will be a minor net increase of 18 ft² (< 0.001 ac) of man-made structures in the Perennial Stream (below OHWM) in San Jose Creek (difference between total area of piers in the stream under current conditions and with the proposed bridge). Although the proposed action may result in approximately 0.038 ac of permanent impacts to jurisdictional wetlands, the impacts are at the disturbed edges of wetland areas representing low quality habitat. Additionally, small amounts of permanent impacts will occur in non-wetland Riparian habitat (0.020 ac), Ephemeral Drainage habitat in the roadside ditches (0.014 ac), and Non-Riparian streambanks of San Jose Creek and the roadside ditches (0.131 ac).

Temporary impacts will occur in the Perennial Stream habitat primarily resulting from temporary stream diversion and dewatering, and construction in the dewatered bed and banks of San Jose Creek. Temporary impacts will occur in the other categories of jurisdictional features throughout the API for construction access and equipment staging, temporary construction disturbance beyond new fill slopes, and other work areas.

The impacts listed above are considered direct or primary effects. Indirect effects of the proposed project to jurisdictional wetlands, other waters and riparian habitat are primarily associated with the time between construction/implementation of site restoration and sufficient growth of mitigation plantings to provide the functions and values of the

intended mitigation. However, the magnitude of this effect is extremely low given the small area of impact for this project.

4.1.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Impacts were minimized during project development by re-designing the new route for the bicycle/pedestrian path, and modifying construction access areas to avoid impacting the largest and highest quality portions of CWA Wetlands. In addition, the following avoidance and minimization measures will be implemented for potential impacts to these jurisdictional areas resulting from the project:

1. Prior to construction, Caltrans will obtain a Section 404 NWP from USACE, a Section 401 Water Quality Certification from RWQCB, a Section 1602 Streambed Alteration Agreement from CDFW, and a CDP (or Waiver) from SBC.
2. Prior to construction, Caltrans will prepare a Mitigation and Monitoring Plan (MMP) to mitigate impacts to vegetation and natural habitats. The MMP will be consistent with federal and state regulatory requirements and will be amended with any regulatory permit conditions, as required. Caltrans will implement the MMP as necessary during construction and immediately following project completion.
3. Prior to any ground-disturbing activities, ESA fencing will be installed around jurisdictional resources, coastal zone ESHAs, and the dripline of trees to be protected within the project limits. Caltrans-defined ESAs will be noted on design plans and delineated in the field prior to the start of construction activities.
4. During construction, impacts to temporarily disturbed wetlands will be minimized by utilizing wetland mats to reduce compaction caused by equipment.
5. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.
6. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional waters and riparian habitat.
7. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area. This area will either be a minimum of 100 ft from aquatic areas or if the area is less than 100 ft from aquatic areas the area must be surrounded by barriers (e.g. fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site BMPs (Caltrans 2017) applicable to attaining zero discharge of stormwater runoff
8. After construction has been completed, contours will be restored as close as possible to their original condition.

4.1.1.4. COMPENSATORY MITIGATION

The goal of compensatory mitigation is to prevent a net loss of wetlands or other aquatic resource acreage, functions, and values. Several types of compensatory mitigation are available to offset impacts to wetlands, other waters and riparian habitat, including creation, rehabilitation, and enhancement either on-site or off-site. The impacts to jurisdictional waters along San Jose Creek will be of a very small scale. Compensatory mitigation is proposed at a 1:1 ratio (acreage) for temporary impacts, a 3:1 ratio (acreage) for permanent impacts to riparian and salt marsh vegetation.

For mitigation for permanent impacts to Perennial Stream and Wetlands, suitable areas exist adjacent to existing wetlands in API for re-habilitating what was likely salt marsh wetland habitat before it was filled, diked, or drained in the 1940s when the area was developed (see Section 3.1.2.2).

Mitigation for permanent impacts to wetland, riparian and non-vegetated streambank is expected to be completed onsite because there is ample opportunity to improve streambank and salt marsh habitat in the area, by replacing non-native and invasive species with native riparian species. In particular, the area currently mapped as Myoporum Groves and Iceplant Mats vegetation communities that are dominated by invasive species are within and adjacent to the streambank and salt marsh and could be revegetated with native species. However, establishing salt marsh vegetation can be challenging, especially in marginal hydrologic settings as this. Alternatively, Caltrans could partner with a governmental or non-profit organization in the area already actively restoring salt marsh habitats in the region (e.g., Goleta Slough Tidal Restoration Project by SBC, West Goleta Slough project by The Land Trust for SBC, North Campus Open Space Restoration Project through UCSB's Cheadle Center for Biodiversity and Ecological Restoration).

To mitigate for temporary impacts, restoration plantings will be completed onsite and in-kind, utilizing locally present/native species (see Section 3.1.3). Replacement plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan which will be included in the final MMP prepared by the Caltrans' biologist. The MMP will include planting specifications and grading plans to ensure survival of planted vegetation and re-establishment of functions and values. The final MMP will be consistent with standards and mitigation requirements from the applicable regulatory agencies. The MMP will be prepared when full construction plans are prepared, and will be finalized through the permit review process with regulatory agencies.

4.1.1.5. CUMULATIVE IMPACTS

Caltrans guidance for NEPA/CEQA cumulative impacts assessments includes defining a Resource Study Area (RSA). An RSA is the geographic area within which impacts on a particular resource are analyzed. The boundaries of RSAs for cumulative impacts analysis are often broader than the boundaries used for project-specific analysis.

The RSA identified for this cumulative impact analysis is the Goleta Slough watershed (Calwater Level 6 Planning Watershed). The National Wetlands Inventory depicts approximately 692 ac of various wetlands, riparian and stream habitat in the Goleta

Slough watershed RSA. The BSA has approximately 1.3 acres of wetland, riparian and stream habitats, representing approximately 0.19 % of the RSA.

Although not quantifiable based on lack of available information, it is likely that far more wetlands and stream habitats were historically present in the area. It has been estimated that overall, California has lost over 90 % of its historic wetland resources to alternative land use (Dahl 1990). Regulatory agencies have sought to offset the additional loss of wetlands and riparian habitat with restoration and revegetation requirements for projects within their respective jurisdictions.

Approximately 4 % of Goleta Slough remains today (ESA Associates 2015). It formerly covered approximately 18 square miles and has been reduced to about 430 ac (not necessarily the same area as the Level 6 Planning Area or National Wetlands Inventory resources). As described in Section 3.1.2.2, Goleta Slough as it exists today has been largely altered over the past 80 years with the development of the Santa Barbara Airport, the surrounding community and into Goleta, and Ward Memorial Drive. There have been numerous restoration projects in the Goleta Slough Ecosystem Management Plan, although the area of restoration of wetlands or stream habitat has not been quantified.

Caltrans and SBC have two other projects programmed within the RSA over the next few years (SB 101/San Jose Creek Bridge replacement and Hollister Avenue Bridge Over San Jose Creek) and two projects in the past (Goleta Beach Park Bridge and Goleta Drainage Project) that may contribute to cumulative impacts to regulated wetlands and waters resources. In addition, known and future development in the RSA could potentially result in direct loss of wetland and riparian areas, as well as habitat fragmentation.

Given the historical context and known and future development potential within the RSA, the proposed bridge replacement project has the potential to add to the cumulative impacts to wetlands, other waters and riparian habitat in this RSA. However, the proposed action will improve wetlands, other waters and riparian habitat in the API by rehabilitating disturbed and possibly former riparian and wetland habitats. With respect to known or potential development within the RSA, it is anticipated that cumulative impacts to wetlands, other waters and riparian habitat will be offset through all of the restoration projects (past, present and future) around the Goleta Slough Ecosystem Management Plan, or will be mitigated on a project-by-project basis through compliance with appropriate permit conditions determined by regulatory authorities.

4.1.2. Discussion of Southern Coastal Salt Marsh and Pickleweed Mats

4.1.2.1. SURVEY RESULTS

As described in Section 3.1.3.1, the Pickleweed Mats community (= *Sarcocornia pacifica* Herbaceous Alliance) is a type of Southern Coastal Salt Marsh. The former is a more recent classification from A Manual of California Vegetation (Sawyer et al. 2009) and the latter is the historic classification from Holland (1986). This community occupies 2,374 ac within the BSA. The various areas mapped as the Pickleweed Mats community have varying degrees of productivity and value as a salt marsh community due to adjacent disturbances. The largest polygon located to the south of the bicycle/pedestrian path has the greatest species diversity and relatively less invasive species than all of the other

wetland polygons. Historically, this appears to be an area that was either waterway or marshland prior to all of the development between the 1940s and 1960s (ESA Associates 2015). At the other end of the spectrum, the narrow ditches on either side of the bicycle/pedestrian path that were delineated as wetland are mapped as the Pickleweed Mats community, but these areas are highly modified and disturbed, surrounded by iceplant, *Bromus* spp., and black mustard.

4.1.2.2. PROJECT IMPACTS

Since this is the only CWA wetland habitat type in the BSA, refer to Section 4.1.1.2 for a description of impacts. As described in Section 4.1.1.3, the project was re-designed to minimize impacts to salt marsh habitat. In particular, both permanent and temporary impacts have been limited to only those portions of this community that are already highly disturbed, adjacent to SR-217 and the bicycle/pedestrian path. Although a total of 0.280 ac of Southern Coastal Salt Marsh/Pickleweed Mats may be impacted (permanent impacts = 0.038 ac, temporary impacts = 0.142 ac), the impact areas do not represent high quality representations of this natural community.

4.1.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

Impacts were minimized during project development by re-designing the new route for the bicycle/pedestrian path, and modifying construction access areas to avoid impacting the largest and highest quality portions of the Southern Coastal Salt Marsh/Pickleweed Mats community. In addition, the following avoidance and minimization measures will be implemented for potential impacts to these jurisdictional areas resulting from the project:

1. Prior to construction, Caltrans will prepare a MMP to offset impacts to sensitive natural communities such as the Southern Coastal Salt Marsh/Pickleweed Mats community. The MMP will be consistent with federal and state regulatory requirements and will be amended with any regulatory permit conditions, as required. Caltrans will implement the MMP as necessary during construction and immediately following project completion.
2. Prior to any ground-disturbing activities, ESA fencing will be installed around sensitive natural communities to be protected within project limits. Caltrans-defined ESAs will be noted on design plans and delineated in the field prior to the start of construction activities.
3. During construction, minimize impacts to temporarily disturbed wetlands by utilizing wetland mats to reduce compaction caused by equipment.
4. After construction has been completed, contours will be restored as close as possible to their original condition.

4.1.2.4. COMPENSATORY MITIGATION

Compensatory mitigation as described in Section 4.1.1.4 applies to this community.

4.1.2.5. CUMULATIVE IMPACTS

The cumulative impacts analysis described in Section 4.1.1.5 applies to this community.

4.1.3. Discussion of Southern California Steelhead Critical Habitat

4.1.3.1. SURVEY RESULTS

As described in Section 3.2, the project reach of San Jose Creek is within designated Critical Habitat for Southern California steelhead. The physical and biological features for Southern California steelhead Critical Habitat are: 1) freshwater spawning sites with water quality and quantity and substrate to support spawning, incubation and larval development; 2) freshwater rearing sites with water quality, floodplain connectivity, forage habitat and natural cover to support juvenile growth; 3) freshwater migration corridors free of obstructions; 4) estuarine areas for juvenile transition between fresh and salt water; 5) nearshore marine areas for growth and maturation; and 6) offshore marine areas for growth and maturation. The BSA potentially provides freshwater migration corridors during periods of high rainfall and increased downstream flow when adults are migrating upstream, and estuarine areas for juvenile transition between fresh and saltwater during periods when juveniles are out-migrating.

4.1.3.2. PROJECT IMPACTS

Based on the disturbance footprint of the API along San Jose Creek, estimated temporary impacts to steelhead Critical Habitat have been quantified in Table 6 (Perennial Stream). The project will result in insignificant (as defined by FESA) long-term effects to steelhead Critical Habitat because although the new columns will result in a very minor net increase (18 ft²) in area of man-made structures in the stream, these will be located near the bank and a greater portion of the active channel will be free of obstructions.

Implementation of the project would result in temporary impacts to the open water habitat primarily resulting from possible pile driving during installation of the temporary trestle as well as dewatering the project work area. Equipment access into the stream channel, constructing the new bridge, and demolishing the existing bridge will be performed in the dewatered portion of the stream, and debris during bridge demolition will be separated from the stream with a temporary platform.

The temporary impacts may result in the loss of service to steelhead Critical Habitat for an estimated six to eight months in the spring and summer. However, the magnitude of these adverse effects will be minimized through the implementation of avoidance and minimization efforts. Steelhead passage along San Jose Creek through the project area will still be unconstrained on the wetted side of the temporary sheet pile cofferdam.

4.1.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following avoidance and minimization measures will be implemented for potential adverse impacts to steelhead Critical Habitat resulting from the project:

1. Prior to construction, Caltrans will complete FESA consultation with NMFS.
2. Prior to construction, a qualified biologist will conduct an informal worker environmental training program including a description of protected species and

habitats, their legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating FESA and other relevant permit conditions.

3. During construction, instream work will be limited to the low-flow period from June 1 and October 31 in any given year, when the surface water is likely to be at seasonal minimum and to avoid adult steelhead spawning migration and peak smolt emigration. Deviations from this work window will only be made with concurrence from relevant regulatory/resource agencies.
4. Prior to construction, the Contractor will prepare and sign Water Pollution Control Plan or a Storm Water Pollution Prevention Plan that complies with Caltrans Stormwater Quality Handbook (Caltrans 2011). Provisions of this plan will be implemented during and after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.
5. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.
6. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional waters and riparian habitat.
7. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area. This area will either be a minimum of 100 ft from aquatic areas or if the area is less than 100 ft from aquatic areas the area must be surrounded by barriers (e.g. fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site BMPs (Caltrans 2017) applicable to attaining zero discharge of stormwater runoff.
8. Immediately upon completing in-channel work, temporary fills, cofferdams, diversion cofferdams, and other in-channel structures will be removed in a manner that minimizes disturbance to downstream flows and water quality.
9. All temporary excavations and fills within project limits will be removed in their entirety and the affected areas returned to pre-construction elevations.

4.1.3.4. COMPENSATORY MITIGATION

Implementation of the proposed project will require agency coordination and permitting under the FESA. Although terms and conditions may be required to minimize temporary project impacts, compensatory mitigation is not expected because the project will result in a net-benefit to steelhead Critical Habitat.

4.1.3.5. CUMULATIVE IMPACTS

The RSA identified for this cumulative impact analysis is the Calwater South Coast Hydrologic Unit 3315 and UCSB Slough Hydrologic Sub-area 331531, which has

approximately 218 acres of stream/Critical Habitat resources (calculated based on estimated average stream width of 15 ft for all streams in the Critical Habitat unit). The BSA has approximately 1.9 acres of habitat within the Critical Habitat unit that may be directly or indirectly impacted by the proposed project, representing 0.87 % of the RSA.

Caltrans and SBC have two other projects programmed within the RSA over the next few years (SB 101/San Jose Creek Bridge replacement and Hollister Avenue Bridge Over San Jose Creek) and two projects in the past (Goleta Beach Park Bridge and Goleta Drainage Project) that may contribute to cumulative impacts to Critical Habitat resources. The historical condition of the streams in this RSA is described in Section 3.1.2.2 and 4.1.1.5. Historical land management practices in and adjacent to Goleta Slough have resulted in a deterioration of aquatic habitat quality for steelhead in the slough. Ongoing actions that may cumulatively affect steelhead Critical Habitat in the slough include regular flood control practices (“desilting” operations by SBC Flood Control District), agricultural practices in the slough watershed, and urban development in the RSA.

Given the historical context and known and future development potential within the RSA, the proposed bridge replacement project has the potential to add to the cumulative impacts to Critical Habitat in this RSA. Although implementation of the proposed project would result in temporary loss of service of Critical Habitat, the minor net increase in area of man-made structures in the stream channel (18 ft²) is considered insignificant under the FESA. With respect to known or future development within the RSA, it is anticipated that cumulative impacts to steelhead Critical Habitat will be offset through all of the restoration projects (past, present and future) around the Goleta Slough Ecosystem Management Plan, or will be mitigated on a project-by-project basis through compliance with appropriate permit conditions determined by regulatory authorities.

4.1.4. Discussion of Tidewater Goby Critical Habitat

4.1.4.1. SURVEY RESULTS

As described in Section 3.2, the project reach of San Jose Creek is within tidewater goby Critical Habitat unit SB-9 (DOI FWS 2013). Within the designated and mapped Critical Habitat areas, the primary constituent element of the physical or biological features essential to the conservation of tidewater goby consist of persistent, shallow (in the range of approximately 0.3 to 6.6 ft), still-to-slow-moving lagoons, estuaries, and coastal streams with salinity up to 12 parts per thousand (ppt), which provide adequate space for normal behavior and individual and population growth that contain:

- (i) Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction;
- (ii) Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus*, *Ruppia maritima*, *Typha latifolia*, and *Scirpus* spp., that provides protection from predators and high flow events; or
- (iii) Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity.

The above described physical or biological features of tidewater goby Critical Habitat are found within the Perennial Stream habitat in the BSA, including patches of widgeongrass

(*Ruppia maritima*), as seen in Photo 3 in Appendix E. The aquatic conditions are assumed present, including appropriate depth of water (the project reach of San Jose Creek that is usually than 6.6 ft deep), slow-moving water, and presumed salinity of at least 12 ppt. The project reach of San Jose Creek has a suitable substrate for construction of burrows and reproduction, submerged aquatic vegetation in the stream channel, and the sandbar regularly closes as described above.

4.1.4.2. PROJECT IMPACTS

Potential impacts to tidewater goby Critical Habitat are the same as steelhead Critical Habitat, as presented in Section 4.1.3.2.

4.1.4.3. AVOIDANCE AND MINIMIZATION EFFORTS

Avoidance and minimization efforts for tidewater goby Critical Habitat are the same as steelhead Critical Habitat, as presented in Section 4.1.3.3.

4.1.4.4. COMPENSATORY MITIGATION

Compensatory mitigation for tidewater goby Critical Habitat is the same as steelhead Critical Habitat, as presented in Section 4.1.3.4.

4.1.4.5. CUMULATIVE IMPACTS

The RSA identified for this cumulative impact analysis is tidewater goby Critical Habitat unit SB-9, which including has approximately 98 ac of aquatic critical habitat resource (calculated based on estimate area of waterbodies in the critical habitat unit). The BSA has approximately 1.9 acres within SB-9 that may be directly and indirectly impacted by the proposed project, representing approximately 1.0 % of the RSA.

The cumulative effects to tidewater goby Critical Habitat are the same as steelhead Critical Habitat, as presented in Section 4.1.3.5.

4.1.5. Discussion of Essential Fish Habitat

As described in Section 3.3, the project reach of San Jose Creek is considered EFH for PCG and CPS.

4.1.5.1. SURVEY RESULTS

The aquatic habitat in the BSA has brackish water, estuarine habitat conditions, and a muddy substrate. The area is subject to regular tidal influences and supports still, but not stagnant, waters. As described in Section 3.3, the relevant boundary of EFH within the BSA is the mean higher high water level, which is essentially the same as the OHWM at this site.

Fish species that have been observed in the past in Goleta Slough are presented in Section 3.1.4.1. Although past surveys in the project area and surrounding areas have not identified any of the fish species listed in the PCG FMP, the BSA does support suitable habitat for big skate (*Raja binoculata*) and leopard shark (*Triakis semifasciata*), both of which are included in the management plan (PFMC 2016). The only CPS that potentially occur in estuaries such as the BSA are sardines, although they are more common in the near shore and offshore.

The aquatic habitat within the entire BSA is considered estuarine habitat, which is a type of designated Habitat Areas of Particular Concern (HAPC) for PCG EFH.

4.1.5.2. PROJECT IMPACTS

Based on the disturbance footprint of the API along San Jose Creek, estimated impacts to estuarine HAPC for PCG and CPS EFH have been quantified in Table 6, under Perennial Stream. The project has the potential to result in the following types of impacts to PCG EFH as summarized in the “Non-Fishing Impacts to Essential Fish Habitat and Recommended Conservation Measures”: introduction of exotic species, and pile installation and removal (Hanson et al. 2005). Potential impacts to CPS EFH are presumed to be the same. The proposed project is not expected to result in the introduction of exotic species into the EFH. No aquatic invasive species were observed. Although not technically considered “invasive” by CDFW, Goleta Slough already has several non-native fish species that may be considered “exotic” by NMFS. The proposed project will not change baseline conditions.

Table 7 summarizes possible impacts to fish during impact pile driving for the temporary work trestle, using the NOAA Hydroacoustic Worksheet and comparable data from the Caltrans 2015 Technical Guidance for Assessment and Mitigation of Hydroacoustic Effects of Pile Driving on Fish (see Appendix F for calculations).

Table 8. Calculated disturbance threshold distances for pile driving (12-inch steel pipe).

# Pile	Location from Shore	# Strikes Per Day	Distance (m) to threshold			Behavior
			Onset of Physical Injury			
			Peak	Cumulative SEL dB*		RMS
			dB	Fish ≥ 2 g	Fish < 2 g	dB
			206	187	183	150
18	in water or <10 ft	200	0	2	3	100
8	10-60 ft	200	0	2	3	87
6	65-120 ft	200	0	2	4	62

* This calculation assumes that single strike SELs < 150 dB do not accumulate to cause injury (Effective Quiet)

Based on best available data, the peak pressure would be 177 dB for 12-inch steel pipe, which is far below the onset of physical injury (see calculations in Appendix F). The distance to threshold for the cumulative SEL is 2 m for the size class of fish (≥ 2 g) that may be present during the in-stream work window (June 1 and October 31), which is closer than sound monitoring equipment can even measure. The chances are extremely low that fish will remain that close to pile driving activities to accumulate physical injury. The most likely adverse effects from the pile driving will be behavioral, in which steelhead up to 100 m away will be temporarily disturbed (startle or move away from possible feeding or hiding areas) during pile driving activities. Habitat conditions of similar quality are found upstream and downstream of the work area and will provide fish enough area to escape.

Stream diversion and dewatering has the potential to result in water quality impacts that are like utility line/cables/pipeline installation in Hanson et al. (2005) through the release

of sediments, including an increase in turbidity, reduction in dissolved oxygen, and release of pollutants. Increases in turbidity and reduction of dissolved oxygen are expected to be temporary, mainly when the stream diversion is being installed and removed. Potential release of pollutants from the sediment is not expected because sediment testing by SBC indicates no pollutants at action levels in Goleta Slough (Padre Associates 2010).

The project is not expected to result in adverse effects to EFH due to the small work area relative to PCG and CPS EFH in Goleta Slough, and avoidance and minimization measures listed below.

4.1.5.3. AVOIDANCE AND MINIMIZATION EFFORTS

Avoidance and minimization efforts for steelhead Critical Habitat apply to PCG and CPS EFH, as presented in Section 4.1.3.3. The following additional measures will further comply with “Non-Fishing Impacts to Essential Fish Habitat and Recommended Conservation Measures” (Hanson et al. 2005):

1. Impact pile driving associated with bridge construction (excludes the retaining wall for the bicycle path) will be limited to steel pipes no more than 12-inches in diameter and no more than 200 strikes per day.
2. Underwater sound pressure will be monitored during all impact driving. Pile driving operations will cease for the day if the results of underwater sound pressure monitoring show that sound levels upstream and downstream of the pile driving area are higher than the peak threshold of 206 dB or cumulative SEL of 187 dB (measured 32 ft [10 m] from the source). If peak or cumulative SEL are exceeded, the qualified biologist will have the authority to halt impact pile driving and Caltrans will contact NMFS and USFWS to determine if additional measures are necessary.
3. Existing bridge columns will be completely removed if possible, and if not completely removed, cut off at least 3 ft below the streambed/ground surface.
4. Equipment and materials utilized in the water will be cleaned to remove any non-native plant or animal species using hot water or a mild bleach solution. These activities will be performed in an upland area at least 100 ft from the stream to prevent introduction of non-native species during the cleaning process.

4.1.5.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.1.5.5. CUMULATIVE IMPACTS

Because the proposed action is not expected to result in adverse effects to EFH resources, and with the implementation of avoidance and minimization measures, there would be no contribution to cumulative impacts. As such, a cumulative impact analysis is not warranted.

4.1.6. Discussion of Invasive Species

4.1.6.1. SURVEY RESULTS

A total of 35 plant species invasive were observed in the BSA, as listed in Table 2 (Section 3.4). Invasive aquatic species were not observed in the BSA.

4.1.6.2. PROJECT IMPACTS

Ground disturbance and other aspects of project construction (e.g., erosion control, landscaping) could potentially spread or introduce invasive species within the BSA. As described in Section 3.4, invasive plants represent a substantial portion of the BSA and are often dominant species in their plant community. The proposed project has the potential to cause the increase in invasive, terrestrial species into communities and areas not currently dominated by them, such as the Pickleweed Mats and Quailbush Scrub communities. However, the proposed project also has an opportunity to reduce the abundance and spread of invasive species through avoidance and minimization efforts, and restoration plantings.

4.1.6.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following avoidance and minimization measures are recommended:

1. During construction, Caltrans will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible.
2. If the use of imported fill material is necessary, the imported material will be obtained from a source that is known to be free of invasive plant species; or the material will consist of purchased clean material such as crushed aggregate, sorted rock, or similar.
3. Weeds designated for removal will be removed prior to disturbing surface soils and disposed of the same day they are removed. A Caltrans' biologist will locate and mark weeds to be removed in areas where surface soils will be disturbed.
4. Dense concentrations of invasive plants and all noxious weeds will be designated for removal prior to ground disturbing activities.
5. Due to the high concentration of invasive species in the BSA, to prevent the spread of invasive species all vegetation removed from the construction site will be taken to a certified landfill, and if any soil that is removed for construction, the top six inches containing the seed layer in areas with weedy species will be disposed of at a certified landfill.
6. Project plans will avoid the use of plant species that the Cal-IPC, California Department of Agriculture, CDFW, or other resource organizations consider to be invasive or potentially invasive.
7. If necessary, wash stations onsite will be established for construction equipment under the guidance of Caltrans to avoid/minimize the spread of invasive plants and/or seed within the construction area.

4.1.6.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.1.6.5. CUMULATIVE IMPACTS

With implementation of the above avoidance and minimization measures, no adverse cumulative impacts involving invasive species are anticipated.

4.2. Special-Status Plant Species

Plants are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants occurring onsite. Although suitable habitat for six special status plant species occurs in the BSA (see Table 3), no special status plants were observed in the BSA during several field surveys in 2016 and 2018. As such, the proposed project is expected to have no impacts to special status plant species.

4.3. Special-Status Animal Species Occurrences

Animals are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring onsite. Although suitable habitat for 18 special status animal species occurs in the BSA (see Table 4), none were observed in the BSA during several field surveys in 2016 and 2018. However, the following species have the potential to be present in the API during construction activities due to historic or recent records and presence of suitable habitat conditions in the API: obscure bumble bee, Crotch bumble bee, Southern California DPS steelhead, tidewater goby, western pond turtle, Cooper's hawk, grasshopper sparrow, western snowy plover, white-tailed kite, southwestern willow flycatcher, yellow-breasted chat, Belding's savannah sparrow, light-footed clapper rail, California least tern, least Bell's vireo, and yellow warbler, as described in the following subsections.

4.3.1. Discussion of Obscure and Crotch Bumble Bees

4.3.1.1. SURVEY RESULTS

Specific surveys for bees, or other insects were not performed for this project. However, the API contains food plants (as listed in Table 4) for both of these species (see Table D1 in Appendix D). Coyote brush, one of the food plants for obscure bumble bee, was abundant, and some of the other known food plants were also observed in the BSA. Known food plants for Crotch bumble bee were not abundant, but some occur in the BSA. The nearest record for Crotch bumble bee was in 1968, somewhere in or near Isla Vista approximately two miles to the west of the BSA (CNDDDB 2018). No other records for Crotch or obscure bumble bee occur within a five-mi radius of the BSA.

4.3.1.2. PROJECT IMPACTS

The proposed project has the potential to directly impact bees if present during vegetation clearing activities. However, the chances are low that either obscure or Crotch bumble bee will be present during construction given the relatively small API.

4.3.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Potential long-term impacts to habitat for bees, including obscure and Crotch, will be offset through revegetation efforts that will include some of the food plant species.

4.3.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.3.1.5. CUMULATIVE IMPACTS

Since there is a low likelihood of direct impacts to obscure bumble bee and Crotch bumble bee from this project, and with the implementation of avoidance and minimization measures, there would be no contribution to cumulative impacts. As such, a cumulative impact analysis is not warranted.

4.3.2. Discussion of Southern California Steelhead

Along the southern California coast, steelhead represent the current southernmost portion of the native steelhead range in North America, having ecologically and physiologically adapted to seasonally intermittent coastal streams. Steelhead in southern California comprise a DPS that is ecologically discrete from the other populations of *O. mykiss* along the west coast of North America (NMFS, NOAA 2006). With the rise of the human population in southern California in the 20th Century and the associated land and water development within coastal drainages (mainly dams and water diversions), steelhead numbers quickly declined, leading to extirpated populations in many watersheds and sporadic and remnant populations in the remaining watersheds (NMFS 2011). The Southern California DPS was originally listed in 1997, its range was extended to the south in 2002, its status was reaffirmed as Endangered in 2006, and the listing was updated in 2014 (NMFS, NOAA 1997, 2002, 2006, 2014). The Southern California steelhead DPS is geographically defined as Santa Maria River (north of Point Sal) in SBC south to the Tijuana River at the U.S.-Mexico border.

Adult steelhead spawn in freshwater, and juveniles rear in freshwater before out-migrating to the ocean to mature. Adults enter coastal rivers and streams to spawn during the winter and early spring when storms produce sufficient runoff to breach sandbars at the mouths of water bodies to allow fish passage to upstream spawning and rearing habitats (NMFS 2011). Within the Southern California steelhead DPS, rainfall is restricted almost exclusively to the winter months (December through March). Optimal instream habitat for steelhead throughout its entire range on the Pacific Coast can generally be characterized by clear, cool water with abundant cover (i.e., submerged branches, rocks, logs), well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio (Raleigh et al. 1984). However, steelhead can also occupy reaches of streams containing less than optimal habitat, particularly in southern California streams (Bell et al. 2011).

Adult steelhead may either return to the ocean and repeat spawning migration one or more times, die after spawning, or become residents in freshwater and spawn again during their life history. Estuaries play an important role in migration of anadromous

salmonids such as steelhead, because the brackish water and nutrient rich environment supports their transitions between saltwater and freshwater morphologies.

Juveniles rear in freshwater habitats for one to three years before outmigrating to the ocean during the late winter. If juveniles are large enough, they move fairly quickly out to sea, but if not, they may remain in the estuary of their natal stream throughout the summer (Bond 2006). They may also be forced to remain in the estuary when the mouth is cut off from the ocean during the summer by the formation of a sandbar spit, creating a seasonal lagoon. When this occurs, most enter the ocean at a larger size than the same year class fish rearing in freshwater habitats of the stream system. Larger size generally enhances survival in the ocean, and the lagoon-reared fish represent a large majority of the returning adult spawning population (Hayes et al. 2008, Bond 2006).

4.3.2.1. SURVEY RESULTS

Specific surveys for steelhead trout were not performed for this project. During FESA consultation with NMFS for the Goleta Park Bridge Replacement project, NMFS concluded that they did not expect adult or juvenile steelhead to be migrating through the action area during the summer when in-stream work occurred. NMFS believes that juvenile steelhead are not expected to rear in the lower portion of Goleta Slough because qualitative field surveys undertaken near the action area between 1993 and 2008 did not document presence of this species (NMFS 2014). However, some of these surveys were aimed at tidewater goby, where the survey methods are unlikely to be effective for capture of steelhead (ESA Associates 2015). Juvenile steelhead have been reported in upstream habitats of Atascadero, San Jose, San Pedro, and Tecolotito creeks as well as in some of their tributaries including West Fork San Jose Creek, and Maria Ygnacio and San Antonio creeks which flow into Atascadero Creek (Stoecker 2002). Steelhead were not detected during fish salvage for the Goleta Park Bridge replacement project in 2016.

Based on available information, steelhead could potentially be present in San Jose Creek during the summer season when in-stream work will take place (July 12, 2018 email communication with NMFS, see Section 2.4). However, this may be fully dependent on habitat conditions and steelhead movement, that varies considerably at this location due to a combination of anthropogenic disturbances and natural factors.

4.3.2.2. PROJECT IMPACTS

The proposed project has the potential to result in take of steelhead during pile driving for installation of the temporary trestle and stream diversion and dewatering efforts. Stream diversion and dewatering has the potential to result in water quality impacts through the release of sediments, including an increase in turbidity, reduction in dissolved oxygen, and release of pollutants. Increases in turbidity and reduction of dissolved oxygen are expected to be temporary, mainly when the stream diversion is being installed and removed. Potential release of pollutants from the sediment is not expected because sediment testing by SBC indicates no pollutants at action levels in Goleta Slough (Padre Associates 2010).

Table 7 in Section 4.1.5.2 summarizes possible impacts to fish during impact pile driving for the temporary work trestle, using the NOAA Hydroacoustic Worksheet and

comparable data from the Caltrans 2015 Technical Guidance for Assessment and Mitigation of Hydroacoustic Effects of Pile Driving on Fish (see Appendix F for calculations). Based on best available data, the peak pressure would be 177 dB for 12-inch steel pipe, which is far below the onset of physical injury (see calculations in Appendix F). The distance to threshold for the cumulative SEL is 2 m for the size class of fish (≥ 2 g) that may be present during the in-stream work window (June 1 and October 31), which is closer than sound monitoring equipment can even measure. The chances are extremely low that steelhead will remain that close to pile driving activities to accumulate physical injury. The most likely adverse effects from the pile driving will be behavioral, in which steelhead up to 100 m away will be temporarily disturbed (startle or move away from possible feeding or hiding areas) during pile driving activities. Habitat conditions of similar quality are found upstream and downstream of the work area and will provide steelhead enough area to escape.

Caltrans hydraulics engineers evaluated fish passage conditions for the existing bridge and for the proposed bridge and determined that both conditions are favorable for passage of adult and juvenile salmonids (2017 in-house study). The minor increase in man-made structures in the stream channel (18 ft²) due to the proposed project is not considered a significant long-term effect under the FESA.

4.3.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

The avoidance and minimization measures in Section 4.1.3.3 and 4.1.5.3 apply to this section as well. In addition, the following avoidance and minimization will be implemented for potential adverse impacts to steelhead resulting from the project:

5. During instream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes and outlets of hoses or pumps will be completely screened with no larger than 3/32-inch (2.38 mm) wire mesh (measured on the diagonal) to prevent steelhead and other sensitive aquatic species from entering the pump system. Pumped water will be directed through a silt filtration bag and/or into a settling basin allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area. The form and function of all pumps used during the dewatering activities will be checked weekly, at a minimum, by a qualified biological monitor to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.
6. Except for installation of piles for the temporary protective work platform or trestle and installation of the stream diversion, construction work in the active channel will only be performed in a dry or dewatered work environment.
7. Dewatering and clear water diversions will be performed according to Caltrans Construction Site BMPs (2017), and upstream and downstream passage of adult and juvenile fish will be maintained at all times, according to current NMFS guidelines and criteria (NMFS 2001). Qualified biologists will survey, rescue, and relocate aquatic species as the clear water diversion is being installed and removed.

8. Impact pile driving associated with bridge construction (excludes the retaining wall for the bicycle path) will be limited to steel pipes no more than 12-inches in diameter and no more than 200 strikes per day.
9. Underwater sound pressure will be monitored during all impact driving. Pile driving operations will cease for the day if the results of underwater sound pressure monitoring show that sound levels upstream and downstream of the pile driving area are higher than the peak threshold of 206 dB or cumulative SEL of 187 dB (measured 32 ft [10 m] from the source). If peak or cumulative SEL are exceeded, the qualified biologist will have the authority to halt impact pile driving and Caltrans will contact NMFS and USFWS to determine if additional measures are necessary.
10. A Service-approved biologist will capture and relocate any fish present in the work area during construction (including steelhead and tidewater goby), and will:
 - a. Prepare a fish handling and relocation plan.
 - b. Conduct, monitor, and supervise all fish capture, handling, exclusion, and relocation activities (ensure that sufficient personnel are available to safely and efficiently collect protected species and that personnel have been properly trained to identify and safely capture and handle protected species).
 - c. Ensure that protected species are kept out of the water for the least amount of time possible.
 - d. Ensure that the “bagged” portion of seines and nets will remain in the water until fish are removed or transferred to a shallow container(s) of clean water taken from the survey site and placed in a location that will not result in exposure to extreme temperatures.
 - e. Release captured fish as soon as possible to a suitable nearby location within the same watershed, at the discretion of the Service-approved biologist.
 - f. Continuously monitor in-water activities (e.g., placement of cofferdams, dewatering of isolated areas) for the purpose of removing and relocating any protected species that were not detected or could not be removed and relocated prior to construction.
 - g. Initiate salvage activities within temporarily drained waterbodies within a time frame necessary to avoid injury and mortality of protected species.
 - h. Complete capture, handling, exclusion, and relocation activities no earlier than 24 hours before construction begins to minimize the probability that listed species will recolonize the affected areas.

4.3.2.4. COMPENSATORY MITIGATION

Implementation of the proposed project will require agency coordination and permitting under the FESA. Although terms and conditions may be required to minimize temporary

project impacts, compensatory mitigation is not expected because the project will not result in long-term adverse effects to steelhead.

4.3.2.5. CUMULATIVE IMPACTS

With the implementation of avoidance and minimization measures, the proposed action is not expected to result in cumulative impacts to steelhead. As such, a cumulative impact analysis is not warranted.

4.3.3. Discussion of Tidewater Goby

The tidewater goby is a small (rarely exceeding two inches), gray-brown, salt-tolerant fish. The species is endemic to coastal lagoons, estuaries, and backwater marshes of California. The tidewater goby is typically found within the estuarine habitat of lower reaches of coastal streams (Swift et al. 1989). Common features of tidewater goby habitat include shallow water with little to no flow and fine sediment such as sand, mud, or muddy gravel. The species tends to avoid currents and concentrate in slack-water areas (DOI FWS 2013). The tidewater goby is most commonly found in waters with relatively low salinities (less than 10 to 12 ppt), but can tolerate a wide range of salinities, and is frequently found in coastal habitats with higher salinity levels up to 42 ppt. The tidewater goby also occurs in freshwater streams up-gradient and tributary to brackish habitats with salinities less than 0.5 ppt.

Female tidewater gobies lay eggs in burrows excavated by male fish. Burrows most commonly occur in areas with relatively unconsolidated, clean, coarse sand (Swift et al. 1989), and in silt or mud (Wang 1982). Male tidewater gobies remain in the burrow to guard the eggs attached to the burrow, and care for the embryos for approximately 9 to 11 days until they hatch (DOI FWS 2013). They rarely emerge from the burrow to feed (Swift et al. 1989). Tidewater goby larvae occupy the water column after eggs hatch (Wang 1982), then move to bottom substrate as they mature.

4.3.3.1. SURVEY RESULTS

Specific surveys for tidewater goby were not performed for this project, but they are expected to occur in the API. Tidewater gobies were observed in various channels in Goleta Slough in 2006, with the largest populations occurring in Tecolotito and Carneros Creeks (USFWS 2014). Surveys targeting tidewater goby performed in lower portions of San Pedro and San Jose Creek for the Goleta Park Bridge Project in 2008 and 2016 failed to locate any tidewater gobies. However, USFWS considers that all the lower stream reaches of Goleta Slough are suitable and accessible to tidewater goby.

4.3.3.2. PROJECT IMPACTS

Except for the temporary work trestle, stream diversion and/or dewatering will be required for all work in the active stream channel, including removing existing columns and constructing Pier 2 CIDH piles. Other possible impacts to tidewater goby are like steelhead, as described in Section 4.3.2.2. We anticipate that overall direct effects to tidewater gobies will be low due to the small work area and lack of past observations of tidewater gobies in San Jose Creek. Caltrans will limit the size of pile that may be installed with an impact hammer, and limit number of strikes per day during pile driving

activities in and near the water to minimize the risk for cumulative effects (see Section 4.3.2.3). The proposed project will result in a net benefit to habitat conditions for tidewater goby because the number and area of bridge columns will be reduced.

4.3.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

Avoidance and minimization efforts for tidewater goby are the same as steelhead, as presented in Section 4.3.2.3.

4.3.3.4. COMPENSATORY MITIGATION

Compensatory mitigation for tidewater goby is the same as steelhead, as presented in Section 4.3.2.4.

4.3.3.5. CUMULATIVE IMPACTS

With the implementation of avoidance and minimization measures, the proposed action is not expected to result in cumulative impacts to tidewater goby because the project will not result in long-term adverse effects to tidewater goby. As such, a cumulative impact analysis is not warranted.

4.3.4. Discussion of Western Pond Turtle

The western pond turtle is a medium-sized (to 8.5 inches) turtle with a low carapace (shell) occasionally without pattern but usually with a network of spots, lines, or dashes of brown or black often radiating from the growth centers of the carapace shields (Stebbins 2003).

Western pond turtles historically were present in most Pacific slope drainages between the Oregon and Mexican borders (Jennings and Hayes 1994). Pond turtles live where water persists year-round in ponds along foothill streams or in broad washes near the coast. The ponds favored by turtles typically support emergent and floating vegetation such as cattails and algal mats. They also bask on half-submerged logs, rocks, or flat shorelines close to the edge of water. The western pond turtle is mostly aquatic, leaving its aquatic site to reproduce, estivate, and over-winter. It may overwinter on land or in water, but may remain active in water during the winter season. In warmer areas along the central and southern California coast, pond turtles may be active all year (Zeiner et al. 1990).

Breeding for western pond turtles occurs typically in late April to July. Upland nesting sites are required near the aquatic site, and are typically located in open, clay or silt slopes to ensure proper incubation temperature (Jennings and Hayes 1994). Nesting typically occurs in sunny areas within approximately 15 to 330 ft of water (occasionally up to 1.25 miles). Eggs hatch in late fall or overwinter and hatch in early spring of the following year. Some females double clutch during the year.

4.3.4.1. SURVEY RESULTS

While focused surveys for western pond turtle were not performed, the species was not observed in the BSA during the many other biological surveys for this project (see Table 1). The nearest record is along Atascadero Slough, one mile to the west of the BSA and presence of the species is inferred. Although the BSA has only a minimal amount of

suitable basking and aquatic habitat, pond turtles could potentially utilize the adjacent uplands for nesting.

4.3.4.2. PROJECT IMPACTS

Project construction could result in the injury or mortality of western pond turtle (if present) during dewatering, vegetation, and general construction activities. The potential need to capture and relocate western pond turtles could subject these animals to stresses that could result in adverse effects. Injury or mortality could occur via accidental crushing by worker foot-traffic or construction equipment. Indirect impacts could also result from noise and disturbance associated with construction, which could alter foraging and/or nesting behaviors. While temporary loss of vegetation supporting potential breeding habitat could occur, this would be offset by habitat restoration. The implementation of the avoidance and minimization measures such as appropriate timing of vegetation removal, pre-activity surveys, and exclusion zones will reduce the potential for adverse effects to this species.

4.3.4.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following avoidance and minimization will be implemented for potential impacts to western pond turtle:

1. Prior to mobilization of construction equipment, Caltrans will conduct a worker environmental training program including a description of western pond turtle, their legal/protected status, proximity to the project site, and avoidance/minimization measures to be implemented during the project.
2. Prior to the start of construction activities, a qualified biologist will survey the API and, if present, capture and relocate any western pond turtles to suitable habitat downstream of the API.
3. Observations of western pond turtle will be documented on CNDDDB forms and submitted to CDFW upon project completion.

4.3.4.4. COMPENSATORY MITIGATION

No additional mitigation is proposed.

4.3.4.5. CUMULATIVE IMPACTS

Since there is a low likelihood of direct impacts to western pond turtle from this project, and with the implementation of avoidance and minimization measures, there would be no contribution to cumulative impacts. As such, a cumulative impact analysis is not warranted.

4.3.5. Discussion of Special Status and Other Native Migratory Birds

4.3.5.1. SURVEY RESULTS

The BSA has potentially suitable habitat for several rare bird species, but most are not expected due to lack of extant records near the API and/or low quality habitat in the BSA. However, native migratory birds could potentially nest in the BSA. Several cliff swallow

nests were observed underneath the San Jose Creek bridge, at the top of several of the columns adjoining the bridge deck.

The following information provides information on the potential presence of rare bird species in the BSA:

- Cooper's hawk is known to nest in the trees near Atascadero Creek (approximately 1.5 miles west of the BSA, CNDDDB 2018)). Although there are some trees in the BSA, this hawk species tends to occur in larger woodland areas with taller trees than trees in the BSA.
- Although the BSA contains grassland habitat that potentially can be used by grasshopper sparrows for nesting, the species tends to utilize larger expanses of grassland. The nearest record is approximately 1.5 miles to the west at More Mesa, a 36-acre preserve owned managed by UCSB (CNDDDB 2018).
- Western snowy plover has been observed at Goleta Beach, but that was during a winter survey in 1978; they have not been observed since. The former Goleta Slough population is believed to be extirpated (CNDDDB 2018). The closest extant breeding population is at Coal Oil Point, approximately four miles west of the BSA, and separated from the BSA by development. This population is on a reserve, and currently being protected and actively managed for conservation by UCSB.
- The white-tailed kite utilizes open grasslands, marshes, or other large open areas near tall trees for nesting. Nest trees tend to be in isolation or at the edge of a forest. Although the BSA and greater Goleta Slough contains suitable habitat and is within range of this species, it has never been reported nesting in or near the area (Sullivan et al. 2009, iNaturalist 2018, CNDDDB 2018). The closest record is five miles northeast in a woodland setting.
- Although the BSA has some potential, although low quality nesting habitat for southwestern willow flycatcher, the species is not known to occur in Goleta Slough. CNDDDB (2018), ebird (Sullivan et al. 2009) and iNaturalist (2018) have no records of southwestern willow flycatcher anywhere near Goleta or Santa Barbara.
- The BSA contains potentially suitable, although low quality nesting habitat for yellow-breasted chat, although there are no records of the species around Goleta Slough (Sullivan et al. 2009, iNaturalist 2018). CNDDDB (2018) has no records of this taxon in SBC.
- The BSA contains suitable quality and quantity of nesting habitat for Belding's savannah sparrow, and the species is known to nest in Goleta Slough (ESA Associates 2015, Santa Barbara Breeding Bird Study 2018, CNDDDB 2018). Two nesting observation records are also found in and adjacent to the BSA, the closest of which was in the Pickleweed Mats habitat to the south of the bicycle/pedestrian

path (see Figure 8, Santa Barbara Breeding Bird Study 2018). The other patches of potentially suitable nesting habitat (Pickleweed Mats) in the BSA are not as likely to be used by Belding's savannah sparrow due to their small sizes.

- Light-footed clapper rail historically occurred in Goleta slough but has not been detected in the area since 1974 despite repeated survey efforts (CNDDDB 2018). Habitat conditions in the BSA are potentially suitable for nesting, but the area is likely to be busy with pedestrians and vehicles to be occupied by the species.
- The BSA contains potentially suitable, although low quality nesting habitat for yellow warbler, although there are no records of the species around Goleta Slough (Sullivan et al. 2009, iNaturalist 2018). CNDDDB (2018) has only one record of this taxon in the SBC, over 35 miles northwest of the BSA.
- The BSA contains potentially suitable, although low quality nesting habitat for California least tern, although there are no records of the species around Goleta Slough (Sullivan et al. 2009, iNaturalist 2018). The closest breeding population is at Coal Oil Point, approximately four miles west of the BSA, and separated from the BSA by development (CNDDDB 2018). This population is on a reserve, and currently being protected and actively managed for conservation by UCSB.
- Although the BSA has some potential, although low quality nesting habitat for least Bell's vireo, the species is not known to occur in Goleta Slough. Although ebird (Sullivan et al. 2009) has several records of least Bell's vireo in eastern Goleta, these are unconfirmed. CNDDDB (2018) and iNaturalist (2018) have no confirmed records of least Bell's vireo anywhere near Goleta or Santa Barbara.

None of the special-status bird species previously described were observed during field surveys in the BSA, although focused breeding bird surveys were not performed. Only relatively common birds were observed, including cliff swallow nests under the bridge (see Table D2 in Appendix D). However, as described in Section 2.1.1.7, all native migratory birds are protected under the federal Migratory Bird Treaty Act.

4.3.5.2. PROJECT IMPACTS

Caltrans typically anticipates the bird nesting season to occur from February 15 to September 1. Although no rare bird species were observed in the BSA during field surveys for this project, there is a chance that Belding's savannah sparrow may nest in the Pickleweed Mats community in the BSA, although more likely in the less regularly disturbed portions of this community outside of the API. Cliff swallows are expected to continue to nest under the bridge, and other native migratory birds may nest in the BSA.

Bridge demolition and removal of vegetation could directly impact active bird nests and any eggs or young residing in nests (species protected by the MBTA and CFGC Section 3503). In particular, cliff swallows will need to be actively managed during construction to prevent them from occupying nests on the bridge. Indirect impacts could also result from noise and disturbance associated with construction, which could alter perching, foraging, and/or nesting behaviors. While temporary loss of vegetation supporting

potential nesting habitat could occur, this would be offset by habitat restoration. The proposed project is unlikely to result in take of Belding's savannah sparrow, as defined by CESA, because it is unlikely that the species would nest in the disturbed edges of Pickleweed Mats community within the API. Furthermore, it is unlikely that the proposed action will cause indirect impacts that could result in take of Belding's savannah sparrow, as defined by the CESA, due the existing high levels of anthropogenic activities in the area.

The implementation of the avoidance and minimization measures such as appropriate timing of vegetation removal, pre-activity surveys, and exclusion zones will reduce the potential for adverse effects to nesting bird species. As such, the proposed action is not expected to result in take of any state or federally listed taxon of bird, including Belding's savannah sparrow.

4.3.5.3. AVOIDANCE AND MINIMIZATION EFFORTS

Impacts were minimized during project development by re-designing the new route for the bicycle/pedestrian path and modifying construction access areas to avoid impacting the largest and highest quality portions of Pickleweed Mats community, which may be used by Belding's savannah sparrow for nesting. The following avoidance and minimization will be implemented for potential impacts to Belding's savannah sparrow and native migratory birds:

1. If feasible and regulatory approvals allow, all vegetation removal for this project will be scheduled to occur from September 1 to February 14, outside of the typical nesting bird season, to avoid potential impacts to nesting birds.
2. If vegetation removal or other construction activities are proposed to occur within 100 ft of potential nesting habitat during the nesting season (February 15 to October 31), a nesting bird survey will be conducted by a biologist determined qualified by Caltrans no more than three (3) days prior to construction.
3. During construction and the typical nesting season, and while the bridge deck is in place, proactive exclusion measures will be implemented (e.g., exclusion netting or other measures approved by CDFW) to prevent cliff swallows or other native migratory birds from occupying nests on the bridge. Inactive nest removal activities will be monitored by a qualified biologist.
4. The following survey methods are recommended by CDFW for Belding's savannah sparrow:
 - a. Five site visits, if negative, should be conducted between mid-February and the end of April. If survey is conducted early or late in the season, site visits should be spread out. Otherwise, visits can be on consecutive days.
 - b. Surveys should be conducted between 6:00 am and 10:00 am on days that are brisk but sunny.

- c. A tape may not be used unless the surveyor has a Memorandum of Understanding issued by CDFW for such purpose.
 - d. Surveys should not interfere with any other bird nesting activity.
 - e. Surveys should extend outside the project impact area for standard distance depending on the type of work and ambient noise conditions.
 - f. All territorial individuals will be noted, as well as behavior (singing, scolding, perching together, nest building, feeding young, aerial chasing).
5. If an active Belding's savannah sparrow nest is observed within 100 ft of the API, all project activities will immediately cease, and Caltrans will contact CDFW within 48 hours. If required, Caltrans will seek an Incidental Take Permit (ITP) from CDFW under CFGC Section 2018 (b) and implement additional measures as necessary.
6. If an active nest of another native migratory bird is found, Caltrans will coordinate with CDFW to determine an appropriate buffer and monitoring strategy based on the habits and needs of the species. The buffer area will be avoided until a qualified biologist has determined that juveniles have fledged.

4.3.5.4. COMPENSATORY MITIGATION

As described previously, impacts to vegetation would be offset by replacement plantings within the project limits, which will also replace in-kind nesting habitat. No additional mitigation is proposed.

4.3.5.5. CUMULATIVE IMPACTS

Since no direct impacts to Belding's savannah sparrow or nesting birds are expected to result from this project, there would be no contribution to cumulative impacts. As such, a cumulative impact analysis is not warranted.

Chapter 5. **Conclusions and Regulatory Determinations**

5.1. Federal Endangered Species Act Consultation Summary

The following briefly summarizes the FESA Section 7 consultation previously described in Section 2.4.

- Caltrans received the latest official species lists from the NMFS and USFWS for the project on July 3, 2018 (see Appendix C).
- On April 14, 2016, NMFS provided Caltrans with a Letter of Concurrence for the geotechnical drilling (NMFS file number: WCR-2016-4527). Caltrans updated NMFS on January 2, 2018, with the current schedule for geotechnical (summer of 2018) and NMFS replied that the LOC was still valid.
- On December 2, 2016, Caltrans hosted a field meeting at the proposed project site with several regulatory agencies, including Dou-Shuan Yang (USFWS) and Jay Ogawa (NMFS). The purpose of the meeting was to introduce the project, discuss design options, potential environmental impacts, and potential permitting implications. All attendees expressed concerns regarding whether the project might affect hydraulics within the area. USFWS said that they had no records of California red-legged frogs within 2.3 miles of the project area and they do not expect California red-legged frog in the project area. Caltrans emailed the project hydraulics study and fish passage analysis to NMFS and USFWS and received no follow-up comments or request for more information.
- On May 8, 2018, Caltrans provided NMFS and USFWS with a status update, and request for feedback, and request to combine the Biological Assessment for steelhead and tidewater goby. Subsequently, both agencies agreed to a combined Biological Assessment, and also including EFH in the document.
- While developing this NES, Caltrans and NMFS discussed the potential presence of steelhead in the BSA. Although steelhead were not expected to be in the stream during construction of the nearby Goleta Park Bridge replacement project (performed in 2016), NMFS believes that steelhead have the potential to be rearing in the waters surrounding the SR-217/San Jose Creek bridge project during the summer construction season.

The following summarizes the FESA Section 7 effects determinations previously described in Tables 3 and 4, based on impacts assessments in Chapter 4.

- The FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, southern California DPS steelhead. The basis for this determination is that steelhead presence has been inferred (based on the best available information) and there would be a potential for take of the species during dewatering activities, capture, and relocation. An unknown number of

steelhead could be subjected to take, but the potential is anticipated to be low due to low quality habitat conditions. Formal consultation with NMFS will be required.

- The FESA Section 7 effect determination is that the proposed project may affect, but is not likely to result in destruction or adverse modification of southern California steelhead critical habitat. The placement of temporary dewatering dams, dewatering, and bridge replacement activities within San Jose Creek could result in a temporary disruption of service for steelhead, but the extent and effects of this are estimated to be minor due to the small project work area, requirements that fish passage be maintained at all times, and other avoidance and minimization measures. Consultation with NMFS will be required for temporary effects to steelhead Critical Habitat.
- The FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, tidewater goby. The basis for this determination is that tidewater goby presence has been inferred (based on the best available information) and there would be a potential for take of the species during dewatering activities, capture, and relocation. An unknown number of tidewater gobies could be subjected to take, but the potential is anticipated to be low due to low quality habitat conditions. Formal consultation with USFWS will be required.
- The FESA Section 7 effect determination is that the proposed project may affect, but is not likely to result in destruction or adverse modification of tidewater goby critical habitat. The placement of temporary dewatering dams, dewatering, and bridge replacement activities within San Jose Creek could result in a temporary disruption of service for tidewater gobies, but the extent and effects of this are estimated to be minor due to the small project work area, requirements that fish passage be maintained at all times, and other avoidance and minimization measures. Consultation with USFWS will be required for temporary effects to tidewater goby Critical Habitat.
- Because of a lack of suitable habitat and/or no observations during appropriately-timed floristic surveys, the FESA Section 7 effects determination is that the proposed project will have no effect on the following federally listed plant taxa: marsh sandwort, salt marsh bird's-beak, Contra Costa goldfields, and Gambel's watercress. There will be no impacts to critical habitat for any of these federally listed plant taxa.
- Because of a lack of suitable habitat or nearby records, the FESA Section 7 effects determination is that the proposed project will have no effect on the following federally listed animal taxa: vernal pool fairy shrimp, black abalone, white abalone, California red-legged frog, federally-listed sea turtles, marbled murrelet, western snowy plover, southwestern willow flycatcher, light-footed clapper rail, California least tern, least Bell's vireo, Guadalupe fur seal, southern sea otter, or any other federally listed marine mammals. There will be no impacts to federally designated critical habitat for any of these federally listed animal taxa.

5.2. Essential Fish Habitat Consultation Summary

EFH for PCG and CPS may be present in the API, but the proposed project is not expected to adversely affect PCG and CPS EFH due to the small work area relative to PCG and CPS EFH in Goleta Slough, and avoidance and minimization measures (refer to Section 4.1.5.3). EFH consultation with NMFS will not be required.

5.3. California Endangered Species Act Consultation Summary

Although Belding's savannah sparrow, a state Endangered species, has the potential to occur near the API, the proposed project is not expected to result in take of any state listed species as defined by the CESA with the implementation of avoidance and minimization measures. Therefore, a CFGC Section 2081 permit is not required.

5.4. Wetlands and Other Waters Coordination Summary

Executive Order 11990 was issued on May 24, 1977, directing federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

Wetlands, other waters, and riparian areas under the jurisdiction of USACE, RWQCB, CDFW, and CCC will be impacted by the proposed project. Summaries of jurisdictional wetlands/waters and riparian habitat within the BSA and anticipated impacts are included in Table 6. A Jurisdictional Determination from the USACE will be obtained during the PS&E phase of the project. The proposed project will require a CWA Section 404 permit from USACE, a CWA Section 401 Water Quality Certification from RWQCB, a CFGC Section 1602 Streambed Alteration Agreement from CDFW, and a Coastal Development Permit/Waiver from SBC (on behalf of the CCC). Compensatory mitigation for impacts to jurisdictional areas will be completed through on-site plantings or off-site, in-kind restoration completed by an outside entity, as described in Section 4.1.1.4.

5.5. Invasive Species

Executive Order 13112 defines invasive species as "...an alien (or non-native) species whose introduction does or is likely to cause economic or environmental harm or harm to human health." As discussed previously in Sections 3.4 and 4.1.6, invasive plant species and noxious weeds were observed within the BSA. However, avoidance and minimization measures will be implemented to avoid the spread of invasive plants and noxious weeds.

5.6. Other

Section 10 of the Rivers and Harbors Act: Although this project is within a navigable waterway, the U. S. Coast Guard have determined that the project conforms to Advance Approval criteria in 33 CFR 114.70 as listed as a Categorical Exclusion in their NEPA

implementing regulations, and no further review is required by the U. S. Coast Guard, although photographs and as-built drawings are required upon completion of the project.

Migratory Bird Treaty Act: Several species of native migratory birds are known to and potentially occur in the BSA, including bank swallows observed nesting below the bridge deck. Avoidance and minimization measures will be implemented to avoid conflicts with the Migratory Bird Treaty Act.

Marine Mammal Protection Act: Although NMFS expressed concerns over the possibility that this project may impact marine mammals (see Section 2.4), Caltrans does not anticipate that this project will involve take marine mammals due to lack of records of marine mammals in Goleta Slough.

Coastal Zone Management Act and California Coastal Act: The proposed action is within the coastal zone and subject to these regulations. A certification of consistency with the approved Coastal Zone Management Plan is required from the CCC, and the project will require CDP from SBC, or a waiver to satisfy provisions of the California Coastal Act.

Senate Bill 857: Section 5901 of the CFGC relating to fish passage does not apply to this project because the existing and proposed structures do not interfere with fish passage.

A summary of all avoidance, minimization, and mitigation measures is included in Appendix G.

Chapter 6. References

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley and Los Angeles, California. 1568 pp.
- Bell, E, S. M. Albers, J. M. Krug, and R. Dagit. 2011. Juvenile growth in a population of Southern California steelhead (*Oncorhynchus mykiss*). California Fish and Game 97(1):25-35; 2011.
- Bond M. H. 2006. Importance of Estuarine Rearing to Central California Steelhead (*Oncorhynchus mykiss*) Growth and Marine Survival. Master's Thesis, University of California, Santa Cruz.
- California Department of Fish and Game (CDFW). 2018a. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. State of California, California Natural Resources Agency, Department of Fish and Game. March 20, 2018.
- CDFW. 2018b. Special Animal List (April 2018). California Department of Fish and Wildlife California Natural Diversity Database, Sacramento, California. 66 pp. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline> (accessed July 3, 2018).
- California Department of Transportation (Caltrans). 2011. Stormwater Quality Handbooks, Project Planning and Design Guide. Available at: http://www.dot.ca.gov/hq/construc/stormwater/documents/SWPPP_Prep_ManualJune2011.pdf (accessed January 18, 2018).
- Caltrans. 2017. Construction Site Best Management Practices (BMP) Manual. Division of Construction, Caltrans Publication No. CTSW-RT-17-314.18.1. Available at: <http://www.dot.ca.gov/hq/construc/stormwater/CSBMP-May-2017-Final.pdf> (accessed January 18, 2018).
- California Invasive Plant Council (Cal-IPC). 2018. California Invasive Plant Inventory. California Invasive Plant Council, Berkeley. Available at: <https://www.cal-ipc.org/plants/inventory/> (accessed July 6, 2018).
- California Native Plant Society (CNPS), Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> (accessed July 13, 2018).
- CNDDDB (California Natural Diversity Database). 2018. RareFind 5, Occurrence Reports for Goleta, Dos Pueblos Canyon, Lake Cachuma, San Marcos Pass, Little Pine Mountain, and Santa Barbara USGS 7.5-minute quadrangles. California Department of Fish and Wildlife, Government Version, June 2018.

Dahl, T. E. 1990. Wetland losses in the United States 1780s to 1980s. U. S. Department of Interior, Fish and Wildlife Service, Washington, D. C. 13 pp.

Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA): Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California; Final Rule, 2005, 70 (170) Federal Register (FR) 52488 (September 2, 2005) (to be codified at 50 Code of Federal Regulations (CFR) Part 226).

Department of Defense (DOD), Corps of Engineers, Department of the Army: Final Rule for Regulatory Programs of the Corps of Engineers, 1986, 51 (219) FR 41206 (November 13, 1986) (to be codified at 33 CFR Parts 320, 321, 322, 323, 324, 325, 326, 327, 328, 329 and 330).

Department of Interior (DOI), Fish and Wildlife Service (FWS): Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Tidewater Goby; Final Rule, 2013, 78 (25) FR 8746 (February 6, 2013) (to be codified at 50 CFR Part 17).

ESA Associates. 2015. Goleta Slough Area Sea Level Rise and Management Plan, August 2015. Prepared for The Goleta Slough Management Committee, California.

Environmental Laboratory. 1987. 1987 Army Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Fisheries Hydroacoustic Working Group. 2008. Memorandum, June 12, 2008, Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities. NOAA Fisheries Northwest and Southwest Regions, U. S. Fish and Wildlife Service Regions 1 and 8, California/Washington/Oregon Departments of Transportation, California Department of Fish and Game, U. S. Federal Highway Administration.

Griggs., F. T. 2009. California Riparian Habitat Restoration Handbook (2nd ed). River Partners, Sacramento, California. 77 pp.

Hanson, J., M. Helvey, and R. Strach (eds.). 2003. Nonfishing Effects on West Coast Groundfish Essential Fish Habitat and Recommended Conservation Measures (Version 1, August 2003). National Marine Fisheries Service. 83 pp.

Hayes, S. A., M. H. Bond., C. V. Hanson, E. V. Freund, J. J. Smith, E. C. Anderson, A. J. Ammann, and R. B. MacFarlane. 2008. Steelhead growth in a small central California watershed: upstream and estuarine rearing patterns. Transactions of the American Fisheries Society 137:114-128.

Holland, V. L. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Unpublished report, California Department of Fish and Game, Natural Heritage Division, Sacramento, California. 162 pp.

iNaturalist. 2018. iNaturalist. Available from <http://www.iNaturalist.org> (accessed July 10, 2018).

Jennings, M.R., and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. California Department of Fish and Game, Rancho Cordova, California.

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. ISSN 2153 733X.

Mersel, M. K. and R. W. Lichvar. 2014. A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys and Coast Region of the United States, ERDC/CRREL TR-14-13. U. S. Army Corps of Engineers Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH. 61 pp.

National Marine Fisheries Service (NMFS), National Oceanographic and Atmospheric Administration (NOAA): Endangered and Threatened Species: Listing of Several Evolutionary Significant Units (ESUs) of West Coast Steelhead, 1997, 62 (159) Federal Register (FR) 43937 (August 18, 1997) (to be codified at 50 CFR Parts 222 and 227).

NMFS NOAA: Endangered and Threatened Species: Range Extension for Endangered Steelhead in Southern California, 2002, 67 (84) FR 21586 (May 1, 2002) (to be codified in 50 CFR Part 224).

NMFS, NOAA: Endangered and Threatened Species: Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead; Final Rule, 2006, 71 (3) FR 834 (January 5, 2006) (to be codified at 50 CFR Parts 223 and 224).

NMFS, NOAA: Endangered and Threatened Wildlife; Final Rule to Revise the Code of Federal Regulations for Species Under the Jurisdiction of the National Marine Fisheries Service, 2014, 79 (71) FR 2080 (April 14, 2014) (to be codified at 50 CFR Parts 223 and 224).

NMFS. 2011. Southern California steelhead Recovery Plan. Southwest Region, Protected Resources Division, Long Beach, California. 19 pp.

NMFS. 2014. Endangered Species Act Section 7(a)(2) Concurrence letter for the California Department of Transportation's Bridge-Replacement Project at Goleta Beach Park, Santa Barbara County (NMFS No. 2014-730). West Coast Region, Long Beach, California.

Pacific Fishery Management Council (PFMC). 1998. Description and Identification of Essential Fish Habitat for Coastal Pelagic Species, Appendix D in Coastal Pelagic Species Fishery Management Plan. Portland, Oregon. 41 pp. Available at: http://www.westcoast.fisheries.noaa.gov/publications/habitat/essential_fish_habitat/coastal_pelagic_appendix_d.pdf (accessed July 11, 2018).

PFMC. 2005. Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery, as Amended Through Amendment 19. Portland, Oregon. 88 pp. Available at: <https://www.pcouncil.org/wp-content/uploads/A18-19Final.pdf> (accessed July 12, 2018).

PFMC. 2016. Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington. Portland, Oregon. 160 pp. Available at: http://www.pcouncil.org/wp-content/uploads/2017/03/GF_FMP_FinalThruA27-Aug2016.pdf (accessed July 12, 2018).

PFMC. 2018. Coastal Pelagic Species Fishery Management Plan as Amended Through Amendment 16. Portland, Oregon. 49 pp. Available at: https://www.pcouncil.org/wp-content/uploads/2018/05/CPS_FMP_as_Amended_thru_A16.pdf (accessed July 12, 2018).

Padre Associates. 2010. Santa Barbara County Flood Control and Water Conservation District Flood Control Maintenance Activities in the Goleta Slough, Final Subsequent Environmental Impact Report, SCH No. 2000031092. Santa Barbara County Flood Control and Water Conservation District, Santa Barbara, California. 988 pp.

Raleigh, R.F., T. Hickman, R.C. Soloman, and P.C. Nelson. 1984. Habitat suitability information: rainbow trout. U.S. Department of the Interior, U.S. Fish and Wildlife Service. Washington, D.C. Report USFWS/OBS-82/10.60.

Santa Barbara Breeding Bird Study. 2018. Google Fusion Table: <https://goo.gl/AJQxKj>. Sponsored by the UCSB Center for Biodiversity and Ecological Restoration and the Santa Barbara Audubon Society. eds: Holmgren, M., O'Loghlen, A. Accessed July 13, 2018.

Goleta Slough Management Committee. 1997. 1997 Goleta Slough Ecosystem Management Plan. Santa Barbara, California.

SBC. 2018. Article II Coastal Zoning Ordinance, Section 35-97, Environmentally Sensitive Habitat Area Overlay District, Published January 2014, Updated February 2018. County of Santa Barbara Planning and Development, Santa Barbara, California.

Sawyer, J. O, T. K. Wolf and J. M. Evens. 2009. A Manual of California Vegetation (2nd ed). California Native Plant Society, Sacramento, California. 1300 pp.

Stebbins, R.C. 2003. A field guide to western reptiles and amphibians. 3rd ed., revised. Houghton Mifflin Company, Boston. 533 pp.

Stoecker, M.W. 2002. Steelhead assessment and recovery opportunities in southern Santa Barbara County, California. Conception Coast Project. Santa Barbara, CA. 439 pp. Available at: http://conceptioncoast.org/projects_steelhead_maps.html (accessed July 6, 2018).

Sullivan, B.L., C.L. Wood, M.J. Iliff, R.E. Bonney, D. Fink, and S. Kelling. 2009. eBird: a citizen-based bird observation network in the biological sciences. *Biological Conservation* 142: 2282-2292.

Swift, C. C., J. L. Nelson, C. Maslow, and T. Stein. 1989. Biology and distribution of the tidewater goby, *Eucyclogobius newberryi* (Pisces: Gobiidae) of California. *Bulletin Natural History Museum of Los Angeles County Contributions in Science* 404: 1-19.

U.S. Army Corps of Engineers (USACE). 1986. Regulatory Programs of the Corps of Engineers; Final Rule. *Federal Register* Vol. 51, No. 219:41206-41260.

USACE. 2008a. Memorandum: Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* & *Carabell v. United States*. December 2, 2008.

USACE. 2008b. 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.

USACE. 2008a. Memorandum: Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* & *Carabell v. United States*. December 2, 2008.

USACE and Environmental Protection Agency (EPA). 2007. U. S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. U. S. Army Corps of Engineers and the Environmental Protection Agency. 60 pp.

USACE and EPA. 2015. Clean Water Rule: Definition of “Waters of the United States”; Final Rule. *Federal Register* Vol. 80, No. 124:37054-37127.

U. S. Department of Agriculture, Natural Resource Conservation Service (NSDA, NRCS). 2006. Soil Survey of Santa Barbara County. National Cooperative Soil Survey. Web Soil Survey available at: <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> (accessed December 13, 2017).

USDA, NRCS. 2017. California Hydric Soil List. National Cooperative Soil Survey (actual publication date not provided). Available at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316619.html (accessed December 13, 2017).

U. S. Fish and Wildlife Service (USFWS). 2000. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants. January 2000.

USFWS. 2014. Biological Opinion for the Goleta Beach Park Bridge Replacement Project, Santa Barbara County, California (8-8-14-F-35). Ventura Fish and Wildlife Office, Ventura, California.

USFWS. 2016. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Available at: <http://www.fws.gov/wetlands/> (accessed December 11, 2017).

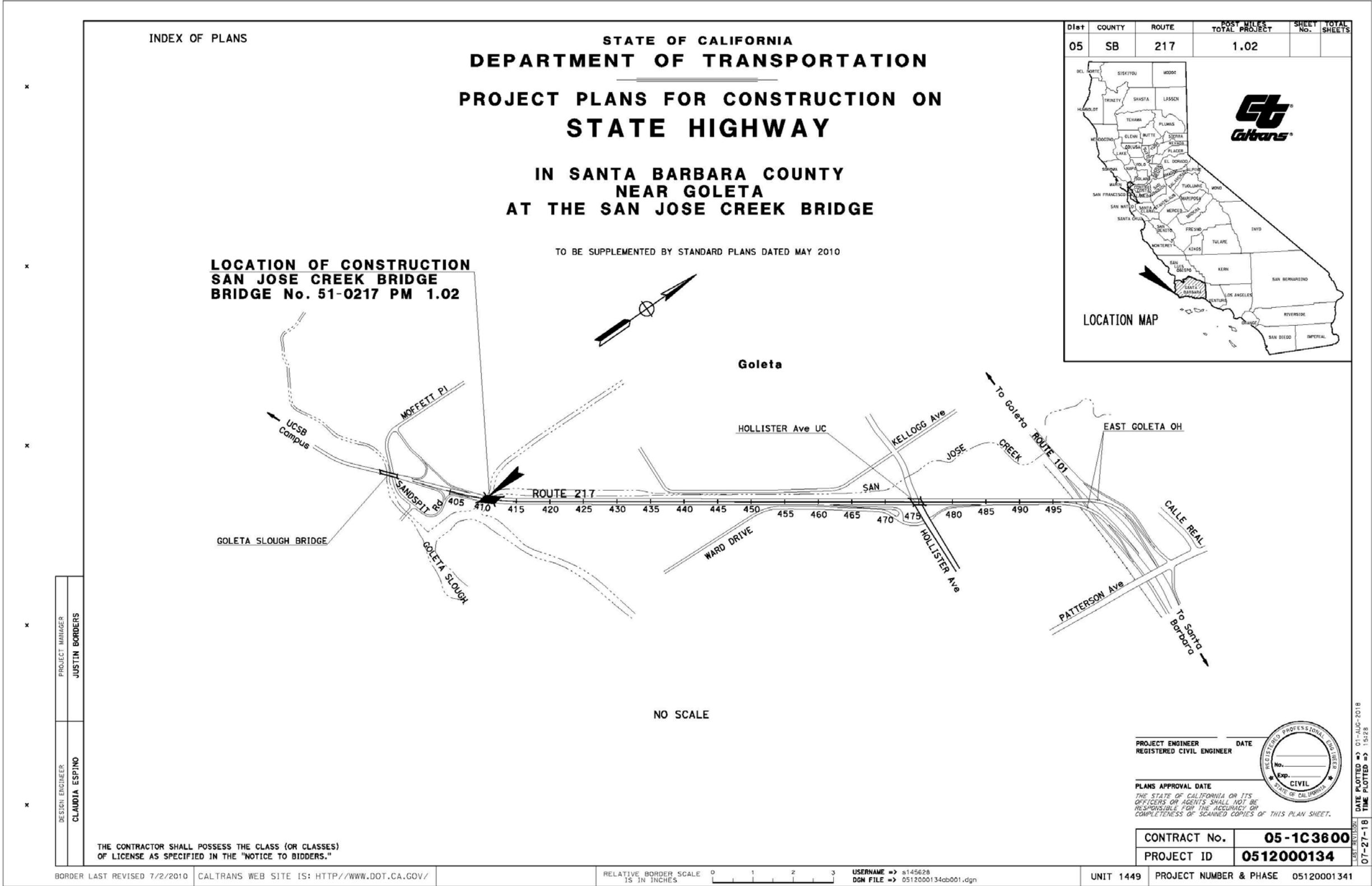
Wang, J.C.S. 1982. Early life history and protection of the tidewater goby (*Eucyclogobius newberryi*) (Girard) in the Rodeo Lagoon of the Golden Gate National Recreation Area. Cooperative National Park Research Study Unit, Technical Report 7, Institute of Ecology, University of California, Davis, CPSU/UCD 022/3.

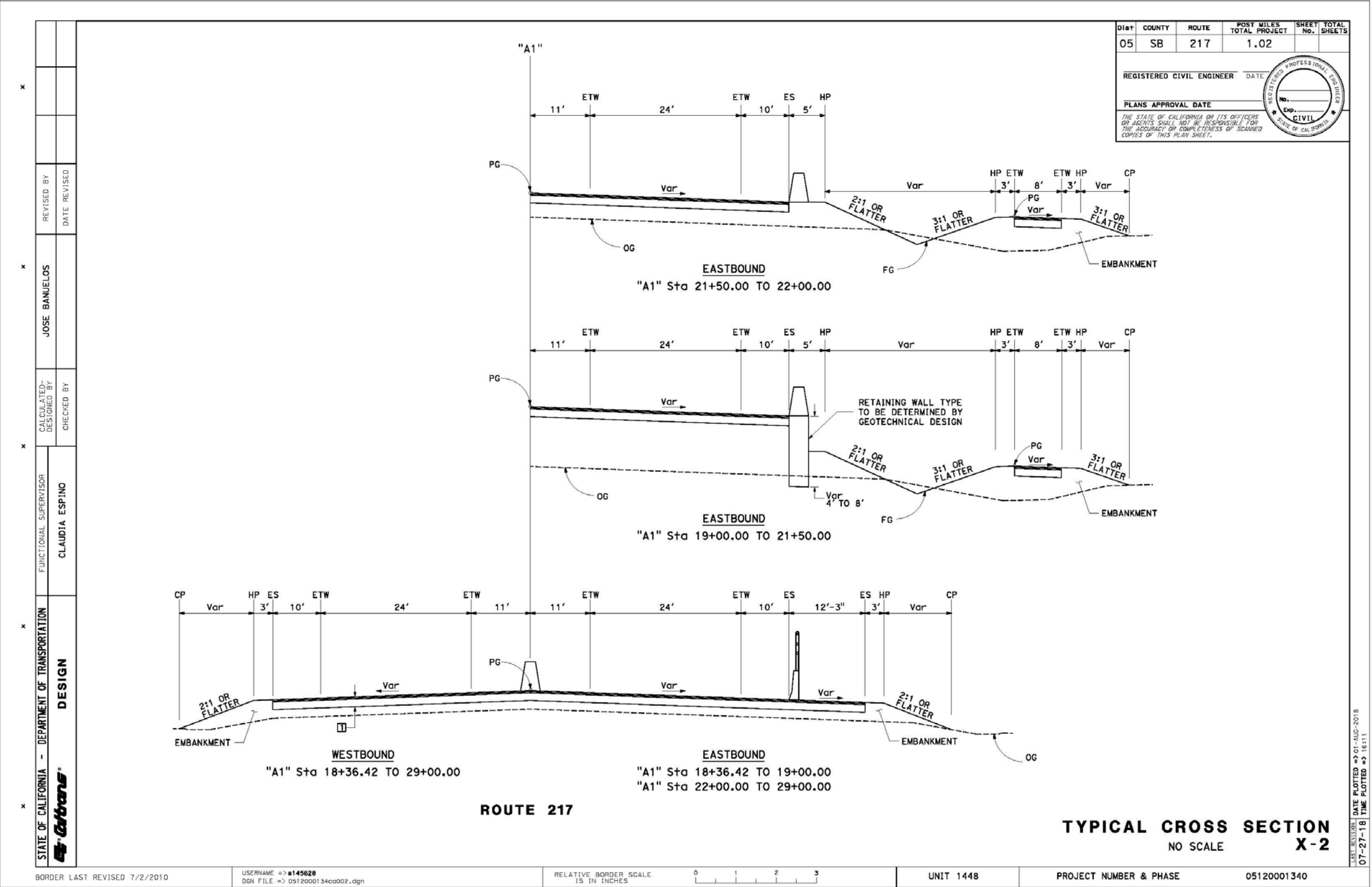
Your Weather Service. 2018. U. S. Climate Data, Version 2.3, Climate data for Santa Barbara, Latitude: 34.445 °N, Longitude: -119.625833 °W. Available at: <https://www.usclimatedata.com/climate/paso-robles/california/united-states/usca1479/2016/10> (accessed May 16, 2018).

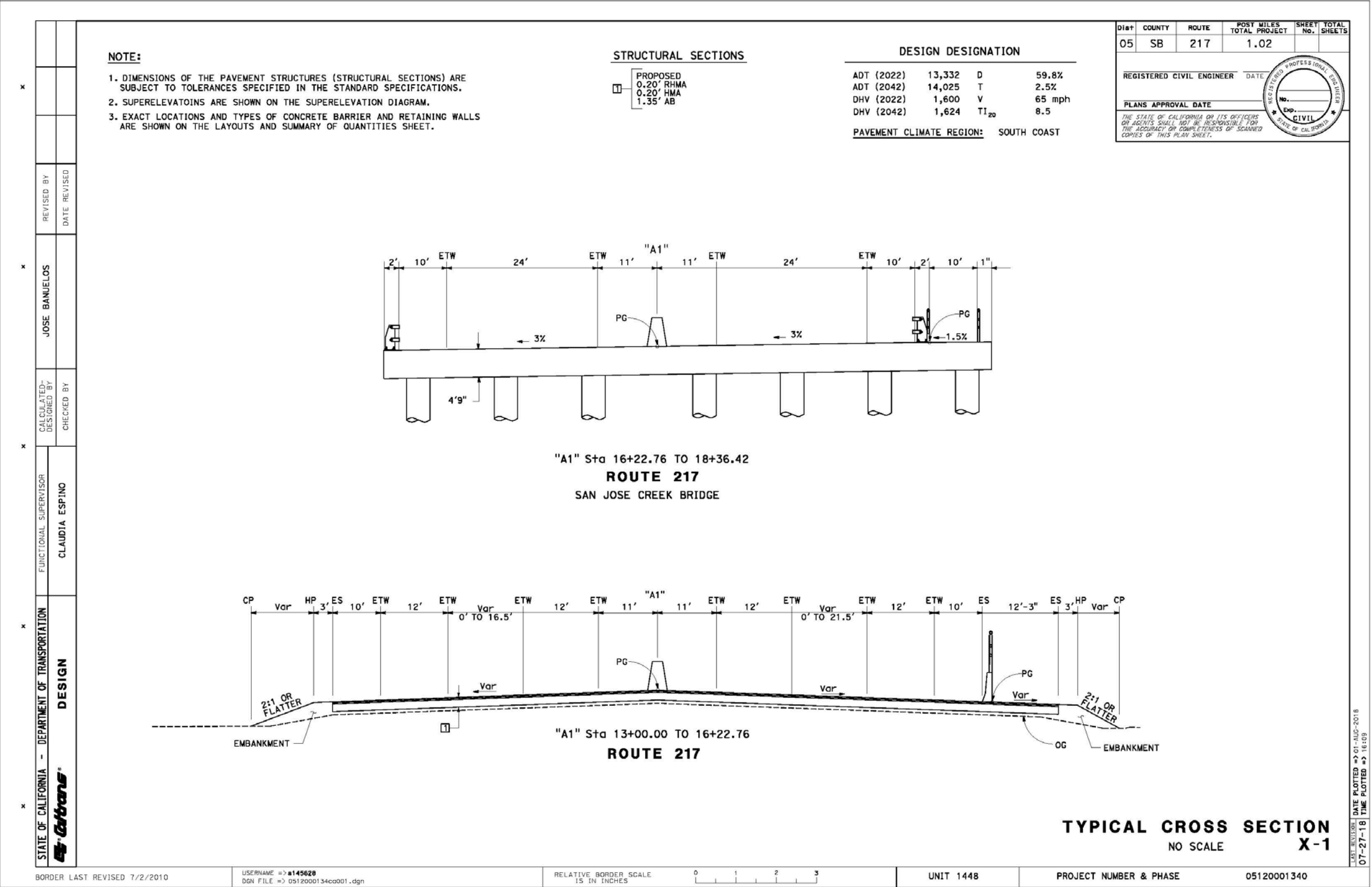
Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White (eds.). 1990. California's Wildlife. Volumes I (amphibians and reptiles), II (birds), and III (mammals). California Statewide Wildlife Habitat Relationships System. The Resources Agency, California Department of Fish and Game. November 1990.

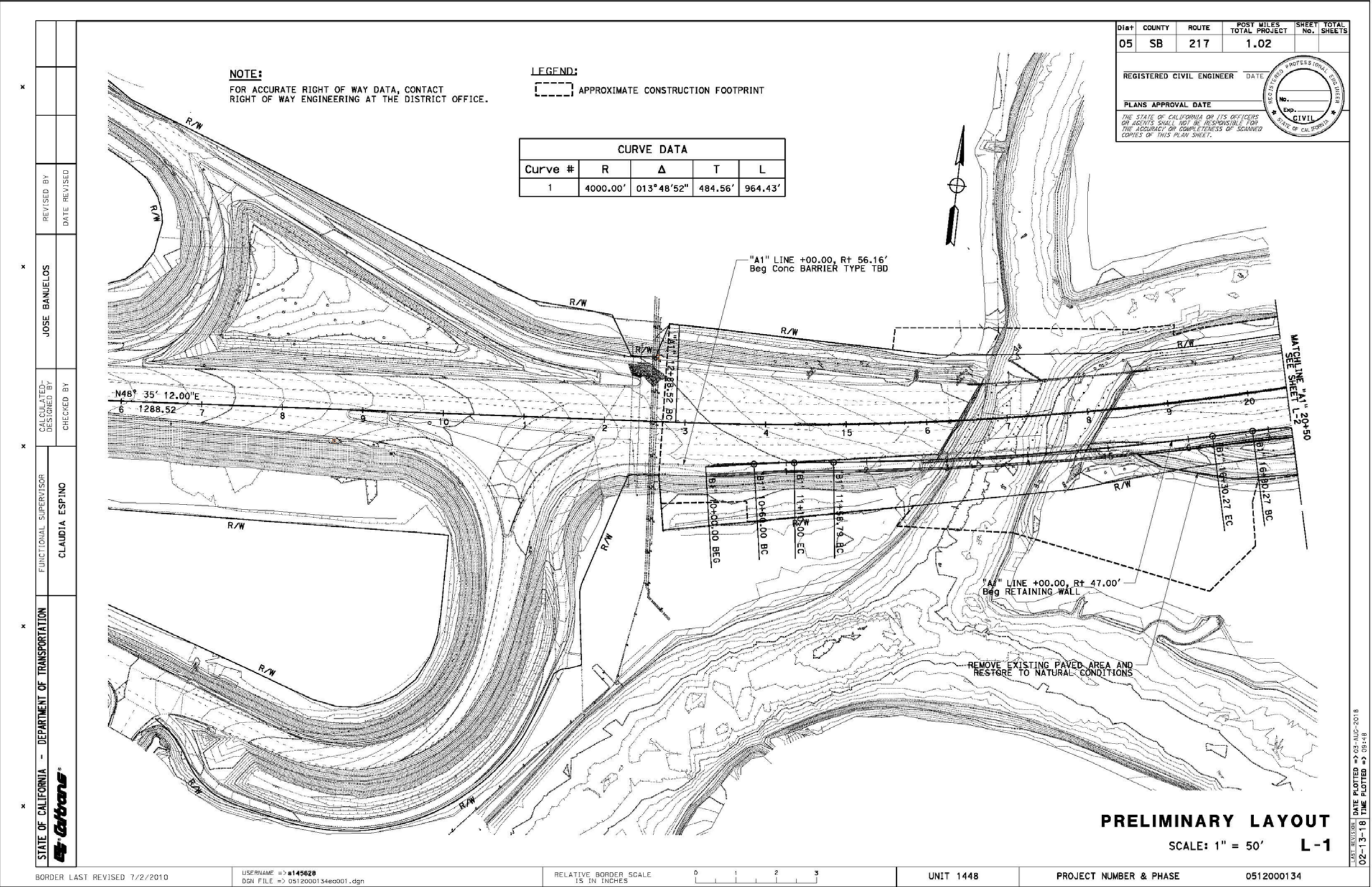
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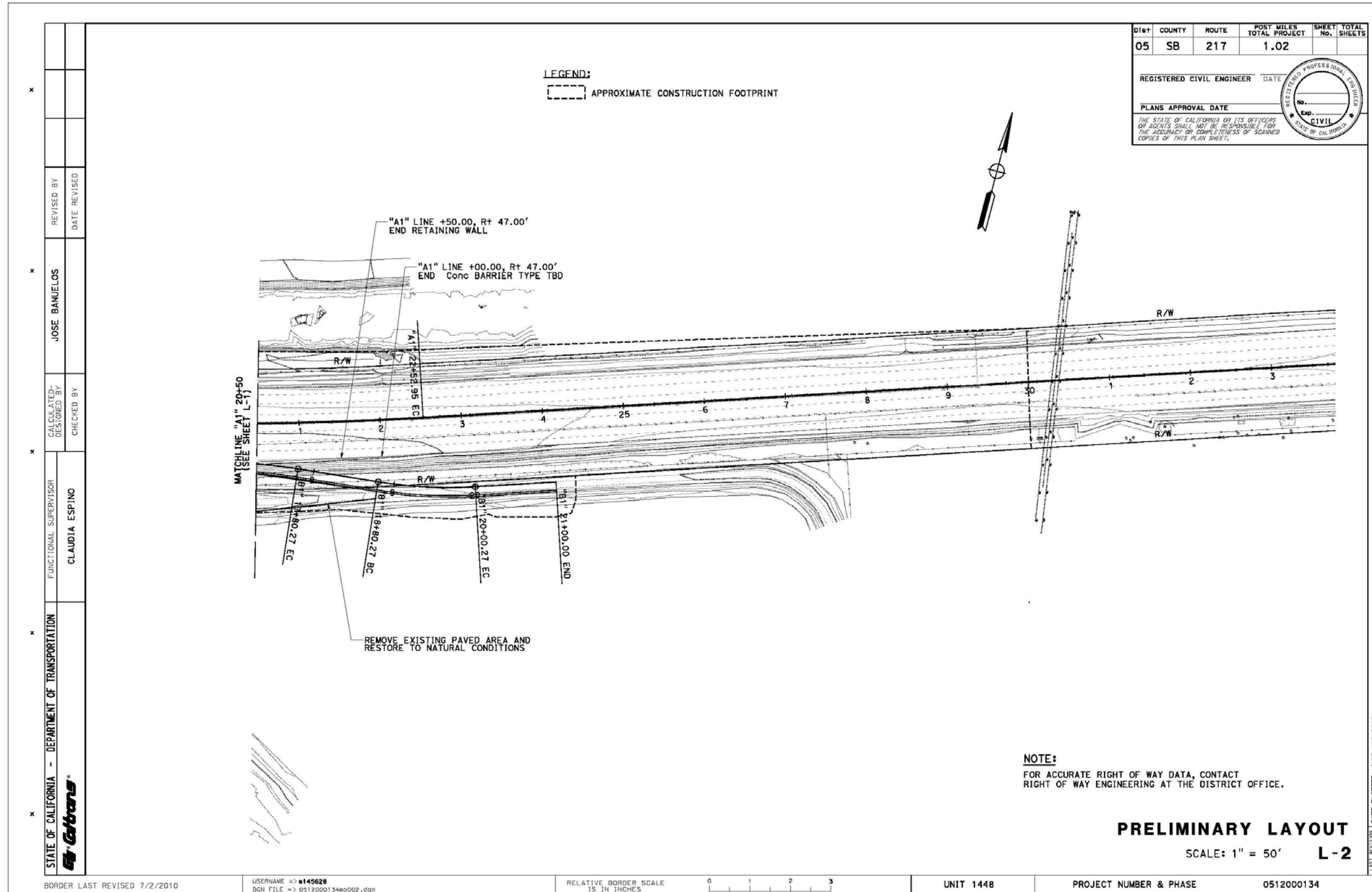
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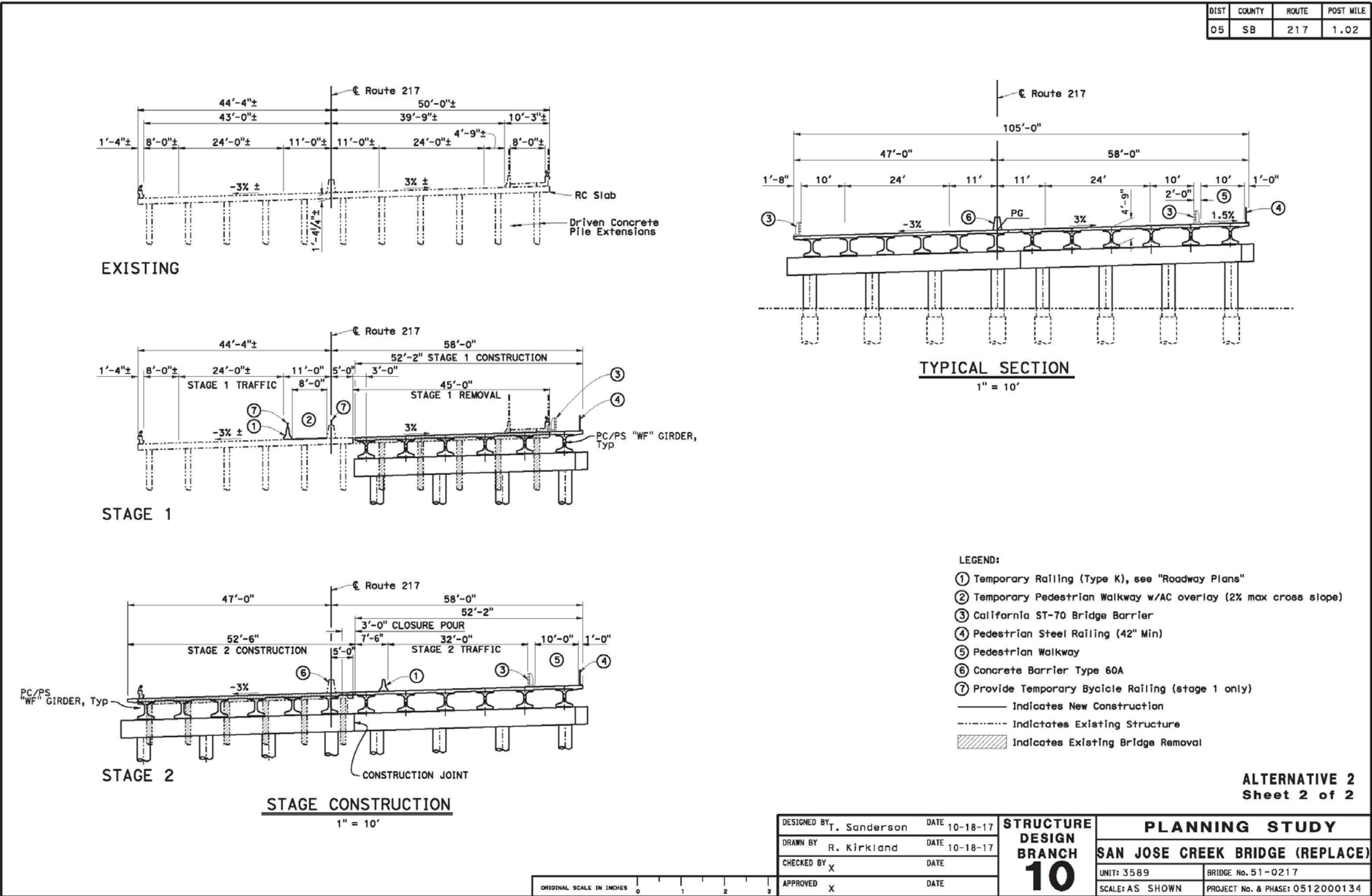








STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES



Appendix B

California Natural Diversity Database



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



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Riparia riparia</i>						
Belding's savannah sparrow	ABPEX99015	None	Endangered	G5T3	S3	
<i>Passerculus sandwichensis beldingi</i>						
Bell's sage sparrow	ABPEX97021	None	None	G5T2T3	S3	
<i>Artemisiospiza belli belli</i>						
black-flowered figwort	PDSCR1S010	None	None	G2?	S2?	1B.2
<i>Scrophularia atrata</i>						
burrowing owl	ABNSB10010	None	None	G4	S3	SC
<i>Athene cunicularia</i>						
California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
<i>Pelecanus occidentalis californicus</i>						
California horned lark	ABPAT02011	None	None	G5T4Q	S4	
<i>Eremophila alpestris actia</i>						
California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<i>Sternula antillarum browni</i>						
California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SC
<i>Rana draytonii</i>						
Coast Range newt	AAAAF02032	None	None	G4	S4	SC
<i>Taricha torosa</i>						
Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Lasthenia conjugens</i>						
Cooper's hawk	ABNKC12040	None	None	G5	S4	
<i>Accipiter cooperii</i>						
Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<i>Lasthenia glabrata ssp. coulteri</i>						
Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
<i>Atriplex coulteri</i>						
Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<i>Bombus crotchii</i>						
Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
<i>Atriplex serenana var. davidsonii</i>						
double-crested cormorant	ABNFD01020	None	None	G5	S4	
<i>Phalacrocorax auritus</i>						

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
estuary seablite <i>Suaeda esteroa</i>	PDCHE0P0D0	None	None	G3	S2	1B.2
ferruginous hawk <i>Buteo regalis</i>	ABNKC19120	None	None	G4	S3S4	
globose dune beetle <i>Coelus globosus</i>	IICOL4A010	None	None	G1G2	S1S2	
grasshopper sparrow <i>Ammodramus savannarum</i>	ABPBXA0020	None	None	G5	S3	SC
great blue heron <i>Ardea herodias</i>	ABNGA04010	None	None	G5	S4	
great egret <i>Ardea alba</i>	ABNGA04040	None	None	G5	S4	
late-flowered mariposa-lily <i>Calochortus fimbriatus</i>	PMLIL0D1J2	None	None	G3	S3	1B.2
light-footed Ridgway's rail <i>Rallus obsoletus levipes</i>	ABNME05014	Endangered	Endangered	G5T1T2	S1	FP
mesa horkelia <i>Horkelia cuneata</i> var. <i>puberula</i>	PDROS0W045	None	None	G4T1	S1	1B.1
mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	IMGASJ7040	None	None	G2	S2	
monarch - California overwintering population <i>Danaus plexippus</i> pop. 1	IILEPP2012	None	None	G4T2T3	S2S3	
northern California legless lizard <i>Anniella pulchra</i>	ARACC01020	None	None	G3	S3	Control Scri
Nuttall's scrub oak <i>Quercus dumosa</i>	PDFAG050D0	None	None	G3	S3	1B.1
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SC
Refugio manzanita <i>Arctostaphylos refugioensis</i>	PDERI041B0	None	None	G3	S3	1B.2
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	AMAFF08041	None	None	G5T3T4	S3S4	SC
sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	IICOL02101	None	None	G5T2	S2	
Santa Barbara honeysuckle <i>Lonicera subspicata</i> var. <i>subspicata</i>	PDCPR030R3	None	None	G5T2?	S2?	1B.2
Sonoran maiden fern <i>Thelypteris puberula</i> var. <i>sonorensis</i>	PPTHE05192	None	None	G5T3	S2	2B.2
southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	ABPBX91091	None	None	G5T3	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
<i>Southern Coastal Salt Marsh</i>						
southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
<i>Centromadia parryi ssp. australis</i>						
tidewater goby	AFCQN04010	Endangered	None	G3	S3	SC
<i>Eucyclogobius newberryi</i>						
Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SC
<i>Corynorhinus townsendii</i>						
tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SC
<i>Agelaius tricolor</i>						
umbrella larkspur	PDRAN0B1W0	None	None	G3	S3	1B.3
<i>Delphinium umbraculorum</i>						
western pond turtle	ARAAD02030	None	None	G3G4	S3	SC
<i>Emys marmorata</i>						
western red bat	AMACC05060	None	None	G5	S3	SC
<i>Lasiurus blossevillii</i>						
western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SC
<i>Charadrius alexandrinus nivosus</i>						
white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Elanus leucurus</i>						
white-veined monardella	PDLAM180A3	None	None	G4T3	S3	1B.3
<i>Monardella hypoleuca ssp. hypoleuca</i>						

Record Count: 48

Appendix C

NMFS and USFWS Species Lists

From: Trask, Mindy@DOT
Sent: Tuesday, July 3, 2018 8:25 AM
To: 'nmfswcrca.specieslist@noaa.gov'
Subject: Federal Highway Administration - SR-217/San Jose Creek Bridge Replacement
Project; EA 05-1C360

Federal agency: Federal Highway Administration - California Division
Federal agency address: 650 Capitol Mall, Suite 4-100, Sacramento, CA 95814-4708
Non-federal agency representative (if any): California Department of Transportation
Non-federal agency representative (if any) address: 50 Higuera Street, San Luis Obispo, CA 93401
Project title: SR-217/San Jose Creek Bridge Replacement Project; EA 05-1C360
Point-of-Contact: Mindy Trask, mindy.trask@dot.ca.gov, (805) 549-3414

Quad Name **Goleta**
Quad Number **34119-D7**

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) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) - **X**
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 -

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) -

X

X

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) -

X

X

X

X

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) -

X

X

X

X

X

X

X

ESA Pinnipeds

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

X

Essential Fish Habitat

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

X

X

X

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 - **X**

MMPA Pinnipeds - **X**

From: NMFSWCRCA Specieslist - NOAA Service Account

<nmfswcrca.specieslist+canned.response@noaa.gov>

Sent: Tuesday, July 3, 2018 8:25 AM

To: Trask, Mindy@DOT

Subject: Re: Federal Highway Administration - SR-217/San Jose Creek Bridge
Replacement Project; EA 05-1C360

Receipt of this message confirms that NMFS has received your email to nmfswcrca.specieslist@noaa.gov. If you are a federal agency (or representative) and have followed the steps outlined on the California Species List Tools web page (http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html), you have generated an official Endangered Species Act species list.

Messages sent to this email address are not responded to directly. For project specific questions, please contact your local NMFS office.

Northern California/Klamath (Arcata) 707-822-7201

North-Central Coast (Santa Rosa) 707-387-0737

Southern California (Long Beach) 562-980-4000

California Central Valley (Sacramento) 916-930-3600



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958



In Reply Refer To:
Consultation Code: 08EVEN00-2018-SLI-0188
Event Code: 08EVEN00-2018-E-01729
Project Name: San Jose Creek Bridge Replacement

July 03, 2018

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 list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a

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Event Code: 08EVEN00-2018-E-01729

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[*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.]

Attachment(s):

- Official Species List

written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

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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:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Endangered Species Act Species

There is a total of 14 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 Fisheries¹, 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.

-
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
<p>Southern Sea Otter <i>Enhydra lutris nereis</i></p> <p>No critical habitat has been designated for this species.</p> <p><i>This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.</i></p> <p>Species profile: https://ecos.fws.gov/ecp/species/8560</p>	Threatened

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Event Code: 08EVEN00-2018-E-01729

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Project Summary

Consultation Code: 08EVEN00-2018-SLI-0188

Event Code: 08EVEN00-2018-E-01729

Project Name: San Jose Creek Bridge Replacement

Project Type: TRANSPORTATION

Project Description: Replace the existing structure on similar project footprint.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/34.42104474493542N119.82954174741567W>



Counties: Santa Barbara, CA

07/03/2018

Event Code: 08EVEN00-2018-E-01729

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Birds

NAME	STATUS
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Least Bell's Vireo <i>Vireo bellii pusillus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Light-footed Clapper Rail <i>Rallus longirostris levipes</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6035	Endangered
Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> 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

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> 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
Tidewater Goby <i>Eucyclogobius newberryi</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

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Event Code: 08EVEN00-2018-E-01729

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Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Contra Costa Goldfields <i>Lasthenia conjugens</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered
Gambel's Watercress <i>Rorippa gambellii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4201	Endangered
Marsh Sandwort <i>Arenaria paludicola</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered
Salt Marsh Bird's-beak <i>Cordylanthus maritimus ssp. maritimus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6447	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> https://ecos.fws.gov/ecp/species/57#crithab	Final

Appendix D

Plant and Animal Species Observed in the BSA

Table D1. Vascular plants observed during 2016-2018 field surveys.

Common Name ¹	Scientific Name ¹	Family ¹	Growth Form ²	Status ¹
western ragweed	<i>Ambrosia psilostachya</i>	Asteraceae	PH	N
California sagebrush	<i>Artemisia californica</i>	Asteraceae	S	N
mugwort	<i>Artemisia douglasiana</i>	Asteraceae	PH	N
giant reed	<i>Arundo donax</i>	Poaceae	PG	I (High) / Nox
onionweed	<i>Asphodelus fistulosus</i>	Asphodelaceae	PH	I (Mod) / Nox
quailbush	<i>Atriplex lentiformis</i>	Chenopodiaceae	S	N
sea scale	<i>Atriplex leucophylla</i>	Chenopodiaceae	PH	N
Australian saltbush	<i>Atriplex semibaccata</i>	Chenopodiaceae	PH	I (Mod)
fat-hen	<i>Atriplex prostrata</i>	Chenopodiaceae	AH	NN
slender wild oat	<i>Avena barbata</i>	Poaceae	AG	I (Mod)
common wild oat	<i>Avena fatua</i>	Poaceae	AG	I (Mod)
coyote brush	<i>Baccharis pilularis</i>	Asteraceae	S	N
Devil's beggartick	<i>Bidens frondosa</i>	Asteraceae	AH	N
black mustard	<i>Brassica nigra</i>	Brassicaceae	AH	I (Mod)
ripgut brome	<i>Bromus diandrus</i>	Poaceae	AG	I (Mod)
soft chess brome	<i>Bromus hordeaceus</i>	Poaceae	AG	I (Lim)
red brome	<i>Bromus madritensis</i> ssp. <i>rubens</i>	Poaceae	AG	I (High)
Italian thistle	<i>Carduus pycnocephalus</i>	Asteraceae	AH	I (Mod) / Nox
Chilean sea fig	<i>Carpobrotus chilensis</i>	Aizoaceae	PH	I (Mod)
sea fig	<i>Carpobrotus edulis</i>	Aizoaceae	PH	I (High)
pigweed	<i>Chenopodium macrospermum</i>	Chenopodiaceae	AH	NN
poison hemlock	<i>Conium maculatum</i>	Apiaceae	PH	I (Mod)
brass buttons	<i>Cotula coronopifolia</i>	Asteraceae	PH	I (Lim)
alkali weed	<i>Cressa truxillensis</i>	Convolvulaceae	PH	N
dodder	<i>Cuscuta pacifica</i> var. <i>pacifica</i>	Convolvulaceae	AH	N
tall flatsedge	<i>Cyperus eragrostis</i>	Cyperaceae	PG	N
carrot	<i>Daucus</i> sp. (<i>carota</i> or <i>pusillis</i>)	Apiaceae	PH or AH	NN or N
Cape ivy	<i>Delairea odorata</i>	Asteraceae	V	I (High) / Nox
saltgrass	<i>Distichlis spicata</i>	Poaceae	PG	N

Common Name ¹	Scientific Name ¹	Family ¹	Growth Form ²	Status ¹
California brittlebush	<i>Encelia californica</i>	Asteraceae	S	N
giant wild rye	<i>Elymus condensatus</i>	Poaceae	PG	N
Canada horseweed	<i>Erigeron canadensis</i>	Asteraceae	AH	N
seaside golden yarrow	<i>Eriophyllum staechadifolium</i>	Asteraceae	PH	N
red-stemmed filaree	<i>Erodium cicutarium</i>	Geraniaceae	AH	I (Lim)
rattail sixweeks grass	<i>Festuca myuros</i>	Poaceae	AG	I (Mod)
Italian ryegrass	<i>Festuca perennis</i>	Poaceae	PG	I (Mod)
alkali heath	<i>Frankenia salina</i>	Frankeniaceae	PH	N
featherweed	<i>Gamochaeta ustulata</i>	Asteraceae	PH	N
Chinese parsley	<i>Heliotropium curassavicum</i>	Boraginaceae	PH	N
bristly oxtongue	<i>Helminthotheca echioides</i>	Asteraceae	PH	I (Lim)
telegraph weed	<i>Heterotheca grandiflora</i>	Asteraceae	PH	N
summer mustard	<i>Hirschfeldia incana</i>	Brassicaceae	PH	I (Mod)
foxtail barley	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Poaceae	AG	NN
coastal goldenbush	<i>Isocoma menziesii</i> var. <i>vernonioides</i>	Asteraceae	S	N
fleshy jaumea	<i>Jaumea carnosa</i>	Asteraceae	PH	N
toad rush	<i>Juncus bufonius</i>	Juncaceae	AG	N
prickly lettuce	<i>Lactuca serriola</i>	Asteraceae	AH	NN
scarlet pimpernel	<i>Lysimachia arvensis</i>	Primulaceae	AH	NN
narrowleaf cottonrose	<i>Logfia gallica</i>	Asteraceae	AH	NN
chaparral mallow	<i>Malacothamnus fasciculatus</i>	Malvaceae	S	N
bull mallow	<i>Malva nicaeensis</i>	Malvaceae	AH	NN
burclover	<i>Medicago polymorpha</i>	Fabaceae	AH	I (Lim)
white sweetclover	<i>Melilotus albus</i>	Fabaceae	AH	NN
sourclover	<i>Melilotus indicus</i>	Fabaceae	AH	NN
Small flowered iceplant	<i>Mesembryanthemum nodiflorum</i>	Aizoaceae	AH	I (Lim)
ngaio tree	<i>Myoporum laetum</i>	Scrophulariaceae	T	I (Mod)
tree tobacco	<i>Nicotiana glauca</i>	Solanaceae	S	I (Mod)
cactus	<i>Opuntia</i> sp.	Cactaceae	S	N
creeping woodsorrel	<i>Oxalis corniculata</i>	Oxalidaceae	PH	NN
Kikiyu grass	<i>Pennisetum clandestinum</i>	Poaceae	PG	I (Lim)
fountain grass	<i>Pennisetum setaceum</i>	Poaceae	PG	I (Mod)
sweet fennel	<i>Foeniculum vulgare</i>	Apiaceae	PH	I (High)
Canary Island date palm	<i>Phoenix canariensis</i>	Arecaceae	T	I (Lim)
English plantain	<i>Plantago lanceolata</i>	Plantaginaceae	PH	I (Lim)
rabbitsfoot grass	<i>Polypogon monspeliensis</i>	Poaceae	AG	I (Lim)
California everlasting	<i>Pseudognaphalium californicum</i>	Asteraceae	PH	N

Common Name ¹	Scientific Name ¹	Family ¹	Growth Form ²	Status ¹
Jersey cudweed	<i>Pseudognaphalium luteoalbum</i>	Asteraceae	AH	NN
cultivated radish	<i>Raphanus sativus</i>	Brassicaceae	AH	I (Lim)
lemonade berry	<i>Rhus integrifolia</i>	Anacardiaceae	S	N
castor bean	<i>Ricinus communis</i>	Euphorbiaceae	S	I (Lim)
California rose	<i>Rosa californica</i>	Rosaceae	S	N
California blackberry	<i>Rubus ursinus</i>	Rosaceae	V	N
curly dock	<i>Rumex crispus</i>	Polygonaceae	PH	I (Lim)
pickleweed	<i>Salicornia pacifica</i>	Chenopodiaceae	PH	N
arroyo willow	<i>Salix lasiolepis</i>	Salicaceae	T	N
Russian thistle	<i>Salsola tragus</i>	Chenopodiaceae	AH	I (Lim) / Nox
blue elderberry	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Adoxaceae	S	N
California bulrush	<i>Schoenoplectus californicus</i>	Cyperaceae	PGH	N
milk thistle	<i>Silybum marianum</i>	Asteraceae	AH	I (Lim)
London rocket	<i>Sisymbrium irio</i>	Brassicaceae	AH	I (Mod)
Douglas' nightshade	<i>Solanum douglasii</i>	Solanaceae	PH	N
prickly sow thistle	<i>Sonchus asper</i> ssp. <i>asper</i>	Asteraceae	AH	NN
common sow thistle	<i>Sonchus oleraceus</i>	Asteraceae	AH	NN
seablite	<i>Suaeda</i> sp.(<i>esterea</i> or <i>calceoliformis</i>)	Chenopodiaceae	PH	N
poison oak	<i>Toxicodendron diversilobum</i>	Anacardiaceae	S	N
garden nasturtium	<i>Tropaeolum majus</i>	Tropaeolaceae	V	NN
stinging nettle	<i>Urtica dioica</i>	Urticaceae	PH	N
dwarf nettle	<i>Urtica urens</i>	Urticaceae	AH	NN
cocklebur	<i>Xanthium strumarium</i>	Asteraceae	AH	N

1. Scientific and common names and origin/status follow The Calflora Database (2017).

2. Growth Form: AG = annual grass, AH = annual herb, PG = perennial grass, PH = perennial herb; S = shrub; T = tree, V = vine.

Table D2. Animal species observed during 2016-2018 field surveys.

Common Name ¹	Scientific Name	Family	Origin/Status ¹
Invertebrates			
Big Sur shoulderband	<i>Helminthoglypta umbilicata</i>	Helminthoglyptidae	N
Amphibians			
western fence lizard	<i>Sceloporus occidentalis</i>	Iguanidae	N
Birds			
Western grebe	<i>Aechmophorus occidentalis</i>	Podicipedidae	N
mallard	<i>Anas platyrhynchos</i>	Anatidae	
California scrub jay	<i>Aphelocoma californica</i>	Corvidae	N
great egret	<i>Ardea alba</i>	Ardeidae	N
great blue heron	<i>Ardea herodias</i>	Ardeidae	N
Canada goose	<i>Branta canadensis</i>	Anatidae	

Common Name ¹	Scientific Name	Family	Origin/Status ¹
red-tailed hawk	<i>Buteo jamaicensis</i>	Accipitridae	N
turkey vulture	<i>Cathartes aura</i>	Cathartidae	N
rock pigeon	<i>Columba livia</i>	Columbidae	I
American crow	<i>Corvus brachyrhynchos</i>	Corvidae	N
common loon	<i>Gavia immer</i>	Gaviidae	SSC
common yellowthroat	<i>Geothlypis trichas</i>	Parulidae	N
house finch	<i>Haemorhous mexicanus</i>	Fringillidae	I
black-necked stilt	<i>Himantopus mexicanus</i>	Recurvirostridae	N
Caspian tern	<i>Hydroprogne caspia</i>	Laridae	N
hooded oriole	<i>Icterus cucullatus</i>	Icteridae	N
western gull	<i>Larus occidentalis</i>	Laridae	N
song sparrow	<i>Melospiza melodia</i>	Passerellidae	N
Northern mockingbird	<i>Mimus polyglottos</i>	Mimidae	N
osprey	<i>Pandion haliaetus</i>	Pandionidae	WL
California brown pelican	<i>Pelecanus occidentalis californicus</i>	Pelecanidae	FP
cliff swallow	<i>Petrochelidon pyrrhonota</i>	Hirundinidae	N
double-crested cormorant	<i>Phalacrocorax auritus</i>	Phalacrocoracidae	WL
spotted towhee	<i>Pipilo maculatus</i>	Passerellidae	N
great-tailed grackle	<i>Quiscalus mexicanus</i>	Icteridae	N
black phoebe	<i>Sayornis nigricans</i>	Tyrannidae	N
European starling	<i>Sturnus vulgaris</i>	Sturnidae	I
California thrasher	<i>Toxostoma redivivum</i>	Mimidae	N
Mammals			
Audubon's cottontail	<i>Sylvilagus audubonii</i>	Leporidae	N
raccoon	<i>Procyon lotor</i>	Procyonidae	N
Virginia opossum	<i>Didelphis virginiana</i>	Didelphidae	I

1. Nomenclature and origin/status follows CDFW (2016).

References:

California Department of Fish and Wildlife (CDFW). 2016. Complete List of Amphibian, Reptile, Bird and Mammal Species in California. Nongame, Sacramento, CA. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=87155&inline> (accessed December 13, 2018).

The Calflora Database. 2017. Calflora: Information on California Plants for Education, Research and Conservation. [web application]. Berkeley, California: The Calflora Database [a non-profit organization]. Available: <http://www.calflora.org/> (accessed November 24, 2017).

Appendix E

Representative Photographs

Photo 1. SR-217 at San Jose Creek Bridge, northbound lane (looking northeast). Photo taken on April 22, 2016.



Photo 2. Bicycle/pedestrian path and southbound lanes of SR-217/San Jose Creek Bridge, looking southwest. Photo taken on April 22, 2016.



Photo 3. Substructure of SR-271/San Jose Creek Bridge, depicting the perennial stream habitat, numerous columns in the stream channel, and lack of fish passage barrier.



Photo 4. Berm at the mouth of Goleta Slough at Goleta Beach, breached during high tides.



Photo 5. Typical view of the Pickleweed Mats Community within the BSA. View is of the southwest area of the BSA, looking southwest. Photo taken on May 24, 2018.



Photo 6. Non-native grassland in the project area. View is of the construction access area in the southeast portion of the BSA, looking south.



Photo 7. The Iceplant Mats community in the roadside ditch on south side of SR-217, between the freeway and the bicycle/pedestrian path, looking northeast. Photo taken on May 14, 2018.



Photo 8. The Quailbush Scrub community lining the west bank of San Jose Creek and south of the SR-217 bridge, looking southwest. Photo taken on July 16, 2018.



Photo 9. The Coyote Brush Scrub community in the southwest portion of the BSA, looking south. Photo taken on June 20, 2018.



Photo 10. Small patches of Arroyo Willow Thickets on the north side of the bridge, looking north. Photo taken on May 14, 2018.



Photo 11. Myoporum Groves community at the southeast corner of SR0217 and the San Jose Creek Bridge, looking east. Photo taken on May 14, 2018.



Appendix F

Pile Driving Noise Calculations

(NOAA Hydroacoustic Worksheet)

Project Title	SR 217 San Jose Creek Bridge Replacement
Pile information (size, type, number, pile strikes, etc.)	16 installed in water (1-2 m deep), 2 installed adjacent on land 0-10 ft from water, 12-inch steel pipe, oscillate or vibrate, final proof with impact hammer

Fill in green cells: estimated sound levels and distances at which they were measured, estimated number of pile strikes per day, and transmission loss constant.

	Acoustic Metric			
	Peak	SEL	RMS	Effective Quiet
Measured single strike level (dB)	177	152	165	150
Distance (m)	10	10	10	

Estimated number of strikes	200
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Cumulative SEL at measured distance
175.01

	Distance (m) to threshold			
	Onset of Physical Injury		Behavior	
	Peak	Cumulative SEL dB**		RMS
	dB	Fish ≥ 2 g	Fish < 2 g	dB
Transmission loss constant (15 if unknown)	206	187	183	150
15	0	2	3	100

** This calculation assumes that single strike SELs < 150 dB do not accumulate to cause injury (Effective Quiet)

Notes (source for estimates, etc.)

Source: Table I.2-3 in Caltrans' 2015 Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. Example from Sausalito Dock, 12-inch steel pipe, 300 lb drop hammer, 2 m deep water. Transmission loss calculated from Caltrans' 2013 Transportation and Construction Vibration Guidance Manual, Soil Class II (Competent), dB/doubling distance = 7.8 dB. No difference in transmission loss constant in-water and 10 ft from water.

Project Title	SR 217 San Jose Creek Bridge Replacement
Pile information (size, type, number, pile strikes, etc.)	8 installed on land 10-60 ft from water, 12-inch steel pipe, oscillate or vibrate, final proof with impact hammer

Fill in green cells: estimated sound levels and distances at which they were measured, estimated number of pile strikes per day, and transmission loss constant.

	Acoustic Metric			
	Peak	SEL	RMS	Effective Quiet
Measured single strike level (dB)	177	152	165	150
Distance (m)	10	10	10	

Estimated number of strikes	200
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Cumulative SEL at measured distance				
175.01				
	Distance (m) to threshold			
	Onset of Physical Injury			Behavior
	Peak	Cumulative SEL dB**		RMS
	dB	Fish ≥ 2 g	Fish < 2 g	dB
Transmission loss constant (15 if unknown)	206	187	183	150
16	0	2	3	87

** This calculation assumes that single strike SELs < 150 dB do not accumulate to cause injury (Effective Quiet)

Notes (source for estimates, etc.)
Source: Table I.2-3 in Caltrans' 2015 Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. Example from Sausalito Dock, 12-inch steel pipe, 300 lb drop hammer, 2 m deep water. Transmission loss calculated from Caltrans' 2013 Transportation and Construction Vibration Guidance Manual, Soil Class II (Competent), dB/doubling distance = 7.8 dB. Transmission loss constant varies between 16 and 18 depending on distance, but only changes distances by 1 m for SEL and 20 m for RMS, so nearest pile (transmission loss 16) presented here.

Pile information (size, type, number, pile strikes, etc.)	6 installed on land 65-120 ft from water, 12-inch steel pipe, oscillate or vibrate, final proof with impact hammer
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Fill in green cells: estimated sound levels and distances at which they were measured, estimated number of pile strikes per day, and transmission loss constant.

	Acoustic Metric			
	Peak	SEL	RMS	Effective Quiet
Measured single strike level (dB)	177	152	165	150
Distance (m)	10	10	10	

Estimated number of strikes	200
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Cumulative SEL at measured distance	175.01			
	Distance (m) to threshold			
	Onset of Physical Injury		Behavior	
	Peak	Cumulative SEL dB**		RMS
	dB	Fish ≥ 2 g	Fish < 2 g	dB
Transmission loss constant (15 if unknown)	206	187	183	150
19	0	2	4	62

** This calculation assumes that single strike SELs < 150 dB do not accumulate to cause injury (Effective Quiet)

Notes (source for estimates, etc.)

Source: Table I.2-3 in Caltrans' 2015 Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. Example from Sausalito Dock, 12-inch steel pipe, 300 lb drop hammer, 2 m deep water. Transmission loss calculated from Caltrans' 2013 Transportation and Construction Vibration Guidance Manual, Soil Class II (Competent), dB/doubling distance = 7.8 dB. Transmission loss constant varies between 19 and 21 depending on distance, but only changes distances by 1 m for SEL and 20 m for RMS, so nearest pile (80 ft, transmission loss 19) presented here.

Appendix G

Summary of Avoidance and Minimization Measures

This Natural Environment Study includes avoidance, minimization, replacement, and monitoring agreements that are negotiated with the Project Development Team and all the regulatory agencies that have jurisdiction over this project.

This list of measures has been prepared for use by Caltrans personnel who are and/or who will be responsible for implementing various recommendations that are made by the Project Development Team and all regulatory agencies during and after construction.

This is the current list of measures as of September 2018. These recommendations are pending final comments and concurrence by the regulatory agencies who have yet to review this project through the Clean Water Act Section 404/401 and Federal Endangered Species Act Section 7 permits, California Fish and Game Code 1602 Lake and Streambed Alteration Agreement, and the National Environmental Policy Act/California Environmental Quality Act review processes. As project development proceeds, these agreements will become refined and possibly revised.

A. Measures for Potential Jurisdictional Wetlands, Other Waters and Riparian Habitat

1. Prior to construction, Caltrans will obtain a Section 404 NWP from USACE, a Section 401 Water Quality Certification from RWQCB, a Section 1602 Streambed Alteration Agreement from CDFW, and a CDP (or Waiver) from SBC.
2. Prior to construction, Caltrans will prepare a Mitigation and Monitoring Plan (MMP) to mitigate impacts to vegetation and natural habitats. The MMP will be consistent with federal and state regulatory requirements and will be amended with any regulatory permit conditions, as required. Caltrans will implement the MMP as necessary during construction and immediately following project completion.
3. Prior to any ground-disturbing activities, ESA fencing will be installed around jurisdictional resources, coastal zone ESHAs, and the dripline of trees to be protected within the project limits. Caltrans-defined ESAs will be noted on design plans and delineated in the field prior to the start of construction activities.
4. During construction, impacts to temporarily disturbed wetlands will be minimized by utilizing wetland mats to reduce compaction caused by equipment.
5. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.

6. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional waters and riparian habitat.
7. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area. This area will either be a minimum of 100 ft from aquatic areas or if the area is less than 100 ft from aquatic areas the area must be surrounded by barriers (e.g. fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site BMPs (Caltrans 2017) applicable to attaining zero discharge of stormwater runoff
8. After construction has been completed, contours will be restored as close as possible to their original condition.

B. Southern Coastal Salt Marsh and Pickleweed Mats

1. Prior to construction, Caltrans will prepare a MMP to offset impacts to sensitive natural communities such as the Southern Coastal Salt Marsh/Pickleweed Mats community. The MMP will be consistent with federal and state regulatory requirements and will be amended with any regulatory permit conditions, as required. Caltrans will implement the MMP as necessary during construction and immediately following project completion.
2. Prior to any ground-disturbing activities, ESA fencing will be installed around sensitive natural communities to be protected within project limits. Caltrans-defined ESAs will be noted on design plans and delineated in the field prior to the start of construction activities.
3. During construction, minimize impacts to temporarily disturbed wetlands by utilizing wetland mats to reduce compaction caused by equipment.
4. After construction has been completed, contours will be restored as close as possible to their original condition.

C. Southern California Steelhead Critical Habitat

1. Prior to construction, Caltrans will complete FESA consultation with NMFS.
2. Prior to construction, a qualified biologist will conduct an informal worker environmental training program including a description of protected species and habitats, their legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating FESA and other relevant permit conditions.
3. During construction, instream work will be limited to the low-flow period from June 1 and October 31 in any given year, when the surface water is likely to be at seasonal minimum and to avoid adult steelhead spawning migration and peak smolt

emigration. Deviations from this work window will only be made with concurrence from relevant regulatory/resource agencies.

4. Instream construction work will only be performed in a dry work environment. Dewatering and clear water diversions will be performed according to Caltrans Construction Site BMPs (2017), and upstream and downstream passage of adult and juvenile fish will be maintained at all times, according to current NMFS guidelines and criteria (NMFS 2001). Caltrans' biologists will survey, rescue, and relocated aquatic species prior to installing and removing the clear water diversion.
5. Prior to construction, the Contractor will prepare and sign Water Pollution Control Plan or a Storm Water Pollution Prevention Plan that complies with Caltrans Stormwater Quality Handbook (Caltrans 2011). Provisions of this plan will be implemented during and after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.
6. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.
7. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional waters and riparian habitat.
8. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area. This area will either be a minimum of 100 ft from aquatic areas or if the area is less than 100 ft from aquatic areas the area must be surrounded by barriers (e.g. fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site BMPs (Caltrans 2017) applicable to attaining zero discharge of stormwater runoff.
9. Immediately upon completing in-channel work, temporary fills, cofferdams, diversion cofferdams, and other in-channel structures will be removed in a manner that minimizes disturbance to downstream flows and water quality.
10. All temporary excavations and fills within project limits will be removed in their entirety and the affected areas returned to pre-construction elevations.

D. Tidewater Goby Critical Habitat

Avoidance and minimization efforts for tidewater goby Critical Habitat are the same as steelhead Critical Habitat, as presented above.

E. Essential Fish Habitat (EFH)

Avoidance and minimization efforts for steelhead Critical Habitat apply to Pacific Coast Groundfish and Coastal Pelagic Species EFH, as presented above. The following

additional measures will further comply with “Non-Fishing Impacts to Essential Fish Habitat and Recommended Conservation Measures”:

1. Impact pile driving associated with bridge construction (excludes the retaining wall for the bicycle path) will be limited to steel pipes no more than 12-inches in diameter and no more than 200 strikes per day.
2. Underwater sound pressure will be monitored during all impact driving. Pile driving operations will cease for the day if the results of underwater sound pressure monitoring show that sound levels upstream and downstream of the pile driving area are higher than the peak threshold of 206 dB or cumulative SEL of 187 dB (measured 32 ft [10 m] from the source). If peak or cumulative SEL are exceeded, the qualified biologist will have the authority to halt impact pile driving and Caltrans will contact NMFS and USFWS to determine if additional measures are necessary.
3. Existing bridge columns will be completely removed if possible, and if not completely removed, cut off at least 3 ft below the streambed/ground surface.
4. Equipment and materials utilized in the water will be cleaned to remove any non-native plant or animal species using hot water or a mild bleach solution. These activities will be performed in an upland area at least 100 ft from the stream to prevent introduction of non-native species during the cleaning process.

G. Invasive Species

1. During construction, Caltrans will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible.
2. If the use of imported fill material is necessary, the imported material will be obtained from a source that is known to be free of invasive plant species; or the material will consist of purchased clean material such as crushed aggregate, sorted rock, or similar.
3. Weeds designated for removal will be removed prior to disturbing surface soils and disposed of the same day they are removed. A Caltrans’ biologist will locate and mark weeds to be removed in areas where surface soils will be disturbed.
4. Dense concentrations of invasive plants and all noxious weeds will be designated for removal prior to ground disturbing activities.
5. Due to the high concentration of invasive species in the BSA, to prevent the spread of invasive species all vegetation removed from the construction site will be taken to a certified landfill, and if any soil that is removed for construction, the top six inches containing the seed layer in areas with weedy species will be disposed of at a certified landfill.
6. Project plans will avoid the use of plant species that the Cal-IPC, California Department of Agriculture, CDFW, or other resource organizations consider to be invasive or potentially invasive.

7. If necessary, wash stations onsite will be established for construction equipment under the guidance of Caltrans to avoid/minimize the spread of invasive plants and/or seed within the construction area.

H. Southern California Steelhead and Tidewater Goby

The avoidance and minimization measures for steelhead and tidewater goby Critical Habitat and Essential Fish Habitat also apply to the species. In addition, the following avoidance and minimization will be implemented for potential adverse impacts to steelhead and tidewater goby resulting from the project:

1. During instream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes and outlets of hoses or pumps will be completely screened with no larger than 3/32-inch (2.38 mm) wire mesh (measured on the diagonal) to prevent steelhead and other sensitive aquatic species from entering the pump system. Pumped water will be directed through a silt filtration bag and/or into a settling basin allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area. The form and function of all pumps used during the dewatering activities will be checked weekly, at a minimum, by a qualified biological monitor to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.
2. Except for installation of piles for the temporary protective work platform or trestle and installation of the stream diversion, construction work in the active channel will only be performed in a dry or dewatered work environment.
3. Dewatering and clear water diversions will be performed according to Caltrans Construction Site BMPs (2017), and upstream and downstream passage of adult and juvenile fish will be maintained at all times, according to current NMFS guidelines and criteria (NMFS 2001). Qualified biologists will survey, rescue, and relocate aquatic species as the clear water diversion is being installed and removed.
4. A Service-approved biologist will capture and relocate any fish present in the work area during construction (including steelhead and tidewater goby), and will:
 - i. Prepare a fish handling and relocation plan.
 - j. Conduct, monitor, and supervise all fish capture, handling, exclusion, and relocation activities (ensure that sufficient personnel are available to safely and efficiently collect protected species and that personnel have been properly trained to identify and safely capture and handle protected species).
 - k. Ensure that protected species are kept out of the water for the least amount of time possible.
 - l. Ensure that the “bagged” portion of seines and nets will remain in the water until fish are removed or transferred to a shallow container(s) of clean water

taken from the survey site and placed in a location that will not result in exposure to extreme temperatures.

- m. Release captured fish as soon as possible to a suitable nearby location within the same watershed, at the discretion of the Service-approved biologist.
- n. Continuously monitor in-water activities (e.g., placement of cofferdams, dewatering of isolated areas) for the purpose of removing and relocating any protected species that were not detected or could not be removed and relocated prior to construction.
- o. Initiate salvage activities within temporarily drained waterbodies within a time frame necessary to avoid injury and mortality of protected species.
- p. Complete capture, handling, exclusion, and relocation activities no earlier than 24 hours before construction begins to minimize the probability that listed species will recolonize the affected areas.

I. Western Pond Turtle

- 1. Prior to mobilization of construction equipment, Caltrans will conduct a worker environmental training program including a description of western pond turtle, their legal/protected status, proximity to the project site, and avoidance/minimization measures to be implemented during the project.
- 2. Prior to the start of construction activities, a qualified biologist will survey the API and, if present, capture and relocate any western pond turtles to suitable habitat downstream of the API.
- 3. Observations of western pond turtle will be documented on CNDDDB forms and submitted to CDFW upon project completion.

J. Special Status and Other Native Migratory Birds

- 1. If feasible and regulatory approvals allow, all vegetation removal for this project will be scheduled to occur from September 1 to February 14, outside of the typical nesting bird season, to avoid potential impacts to nesting birds.
- 2. If vegetation removal or other construction activities are proposed to occur within 100 ft of potential nesting habitat during the nesting season (February 15 to October 31), a nesting bird survey will be conducted by a biologist determined qualified by Caltrans no more than three (3) days prior to construction.
- 3. During construction and the typical nesting season, and while the bridge deck is in place, proactive exclusion measures will be implemented (e.g., exclusion netting or other measures approved by CDFW) to prevent cliff swallows or other native migratory birds from occupying nests on the bridge. Inactive nest removal activities will be monitored by a qualified biologist.

4. The following survey methods are recommended by CDFW for Belding's savannah sparrow:
 - a. Five site visits, if negative, should be conducted between mid-February and the end of April. If survey is conducted early or late in the season, site visits should be spread out. Otherwise, visits can be on consecutive days.
 - b. Surveys should be conducted between 6:00 am and 10:00 am on days that are brisk but sunny.
 - c. A tape may not be used unless the surveyor has a Memorandum of Understanding issued by CDFW for such purpose.
 - d. Surveys should not interfere with any other bird nesting activity.
 - e. Surveys should extend outside the project impact area for standard distance depending on the type of work and ambient noise conditions.
 - f. All territorial individuals will be noted, as well as behavior (singing, scolding, perching together, nest building, feeding young, aerial chasing).
5. If an active Belding's savannah sparrow nest is observed within 100 ft of the API, all project activities will immediately cease, and Caltrans will contact CDFW within 48 hours. If required, Caltrans will seek an Incidental Take Permit (ITP) from CDFW under CFGC Section 2018 (b) and implement additional measures as necessary.
6. If an active nest of another native migratory bird is found, Caltrans will coordinate with CDFW to determine an appropriate buffer and monitoring strategy based on the habits and needs of the species. The buffer area will be avoided until a qualified biologist has determined that juveniles have fledged.