Prado Road Bridge Widening Project

Biological Assessment

Prado Road Bridge over San Luis Obispo Creek

San Luis Obispo, San Luis Obispo County, California

Bridge #49C-107

BRLS-5016(056)

USFWS Consultation Code: 08EVEN00-2019-SLI-0516

March 2020

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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Summary of Findings, Conclusions, and Determinations

The purpose of this Biological Assessment (BA) is to provide technical information and to review the Prado Road Bridge Widening Project in sufficient detail to determine to how the proposed project may affect federally threatened, endangered, or proposed species and designated critical habitat. This BA is prepared in accordance with legal requirements of Section 7 (a)(2) of the Federal Endangered Species Act (FESA) (16 U.S. C 1536(c)) and with Federal Highway Administration (FHWA) and California Department of Transportation (Caltrans) regulation, policy and guidance.

The City of San Luis Obispo (City) Department of Public Works, with FHWA funding FHWA and Caltrans oversight, proposes to widen and replace the Prado Road Bridge (Bridge Number 49C-107). Prado Road Bridge is in the southern portion of San Luis Obispo, San Luis Obispo County, California. The bridge spans San Luis Obispo Creek on Prado Road between State Route 101 (SR-101) and South Higuera Street.

The Prado Road Bridge, constructed in 1957, consists of a two-lane concrete tee-beam bridge over San Luis Obispo Creek with a total length of 123 feet and a deck width of 26.5 feet. The bridge has been classified as structurally deficient and deemed functionally obsolete, as the existing two-lane bridge lacks any pedestrian or bicycle facilities and has insufficient width to accommodate existing and future multimodal traffic demands. The City proposes to replace the existing deficient bridge crossing with a new, wider structure to meet current and projected future travel demands, through the addition of additional vehicular lanes and dedicated bicycle and pedestrian facilities. In conjunction with the bridge replacement, the City plans to construct improvements to the Prado Road/South Higuera Street intersection and to the adjacent Bob Jones Trail, including a trail extension under the Prado Road Bridge. There would also be necessary utility relocations.

Four alternatives for the bridge widening/replacement and associated roadway approach work were analyzed. The City and Caltrans agreed on an alternative that would replace the existing bridge with a wider, precast, concrete I-girder, single-span bridge that spans the creek without the need for supports placed in the creek bed. This alternative would eliminate the existing bridge supports in the channel that currently cause hydraulic constrictions.

A hydraulics analysis of San Luis Obispo Creek was completed by the City. The existing gravity sewer line effectively constricts the flow of water through the bridge and the bridge is under pressure flow. The project will increase the channel opening

and lower the water surface elevation for the 50- and 100-year discharges compared to the existing condition. Rock slope protection (RSP) would also be placed along the streambanks to protect the roadway embankment fills.

The existing bridge and in-channel piles are currently unlikely to affect fish passage in their current state and the proposed project would not change these existing fish passage characteristics, as the existing piles in the creek channel would be removed.

A portion of the proposed work area is within federally designated steelhead critical habitat. Impacts within steelhead critical habitat have been quantified and evaluated based on work activities and the area of San Luis Obispo Creek that will be dewatered. The installation of concrete bridge abutments may permanently impact approximately 3,845 ft^2 (0.08 acre) of steelhead critical habitat but would not affect stream flows. Approximately 22,216 ft^2 (0.51 acre) of temporary impacts would occur within the stream channel from dewatering and diversion during project construction. These impacts equate to less than 1% of the steelhead critical habitat designated for San Luis Obispo Creek (included in Estero Bay Hydrologic Unit 3310). Pile installation for the abutments and retaining wall would be accomplished with drilling and would not require pile driving.

The proposed action has the potential to affect the federally threatened south-central California coast steelhead (*Oncorhynchus mykiss irideus*), designated steelhead critical habitat, the federally threatened California red-legged frog (*Rana draytonii*), the federally endangered least Bell's vireo (*Vireo bellii pusillus*), the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*), and the federally threatened western yellow-billed cuckoo (*Coccyzus americanus occidentalis*).

With this BA, Caltrans is initiating a request for formal Section 7 consultation with the National Marine Fisheries Service (NMFS) for south-central California coast steelhead and designated steelhead critical habitat. Caltrans is also initiating a request for USFWS programmatic concurrence for California red-legged frog under the "*Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program*" (USFWS 2011), along with informal Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) for least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo.

With the incorporation of the required avoidance and minimization measures, the Federal Endangered Species Act Section 7 effects determinations are:

- The proposed project may affect, and is likely to adversely affect, south-central California coast steelhead. The proposed project may affect, and is likely to adversely affect, south-central California coast steelhead critical habitat.
- The proposed project may affect, and is likely to adversely affect, California red-legged frog and will have no effect on federally designated California red-legged frog critical habitat (the project area does not occur within critical habitat for this species). Caltrans is requesting concurrence with these findings under the Programmatic Biological Opinion issued by USFWS (2011).
- The proposed project may affect, but is not likely to adversely affect, least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*).
- The proposed project will have no effect on the following federally listed species: Morro manzanita (*Arctostaphylos morroensis*), marsh sandwort (*Arenaria paludicola*), California jewelflower (*Caulanthus californicus*), Chorro Creek bog thistle/San Luis Obispo fountain thistle (*Cirsium fontinale* var. *obispoense*), Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*), Indian Knob mountainbalm (*Eriodictyon altissimum*), spreading navarretia (*Navarretia fossalis*),), vernal pool fairy shrimp, (*Branchinecta lynchi*), Kern primrose sphinx moth (*Euproserpinus euterpe*), California tiger salamander (*Ambystoma californiense*), blunt-nosed leopard lizard (*Gambelia silus*), California condor (*Gymnogyps californianus*), California clapper rail (*Rallus longirostris obsoletus*), giant kangaroo rat (*Dipodomys ingens*), and San Joaquin kit fox (*Vulpes macrotis mutica*). There will also be no effect on any critical habitat or proposed critical habitat designated for any of these species.

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List of Abbreviated Terms

ADT	Average Daily Traffic
BA	Biological Assessment
BMPs	Best Management Practices
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CIDH	cast-in-drilled-hole
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
DPS	Distinct Population Segment
ECA	Essential Connectivity Area
ESA	Environmentally Sensitive Area
ºF	degrees Fahrenheit
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FO	Functionally Obsolete
ft^2	feet squared
GIS	geographic information system
HBP	Highway Bridge Program
HEC-RAS	Hydrologic Engineering Center River Analysis System
IPaC	Information for Planning and Consultation
LOS	Level of Service
NMFS	National Marine Fisheries Service
OHWM	Ordinary High Water Mark
PCE	primary constituent element
ROW	right-of-way
RSP	rock slope protection
SR	State Route
SWCA	SWCA Environmental Consultants
TIF	Transportation Impact Fees
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1. Introduction

The purpose of this Biological Assessment (BA) is to provide technical information and review the Prado Road Bridge Widening Project (project) in sufficient detail to determine how the proposed project may affect federally threatened, endangered, or proposed species and designated critical habitat. This BA is prepared in accordance with legal requirements of Section 7(a)(2) of the Federal Endangered Species Act (FESA) (United States Code Title 16, Section 1536(c)) and with Federal Highway Administration (FHWA) and California Department of Transportation (Caltrans) regulation, policy, and guidance. This document presents technical information upon which later decisions regarding project impacts are developed. Caltrans has been delegated the authority to act as the lead federal agency under FESA for Section 7 consultations on FHWA funded projects, such as this project.

Official species lists from the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS), as well as a species list generated by the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB) are included in Appendix A. Project Plans are included in Appendix B. A list of plant and animal species observed during surveys within the project area is included in Appendix C. Photo documentation is included in Appendix D.

1.1. Project History

In 2014, a preliminary analysis was conducted as Phase 1 of the project development process to define proposed project alternatives. Four alternatives for the bridge widening/replacement and associated roadway approach work were analyzed:

- Alternative 1 would modify the existing bridge by widening the south and north ends to conform to the current Prado Road corridor width while allowing for intersection operational improvements. This alternative would include widening and connecting piers in the creek bed, abutments, and deck members, as well as placing a retaining wall in front of the existing abutments to improve hydraulic conditions of the creek.
- Alternative 2 would replace the existing bridge with a wider three-span bridge, similar to the existing bridge with two pier supports in the creek bed.

- Alternative 3 would replace the existing bridge with a wider, precast, concrete I girder, single-span bridge that spans the creek without the need for supports placed in the creek bed. This alternative would eliminate the existing bridge supports in the channel that currently cause hydraulic constrictions (particularly as debris is lodged on existing pier supports, which restricts flows under the bridge).
- Alternative 4 would replace the existing bridge with a wider, cast-in-place, prestressed, concrete box girder, single-span bridge that spans the creek without the need for supports placed in the creek bed. This alternative is similar to Alternative 3 but with a deeper superstructure to encase the gravity sewer line. The deeper superstructure increases the water surface elevation compared to Alternative 3.

In 2015, a Caltrans Structure Maintenance Routine Inspection Report gave the existing bridge structure a Sufficiency Rating (SR) of 73.5, with a status of “Structurally Deficient" (SD). Based on the preliminary analysis and the deficient rating of the existing bridge structure, the City approved moving forward with replacement of the bridge, with Alternative 3 as the preferred alternative identified for further development. Caltrans Structures Local Assistance has concurred that bridge replacement is the appropriate course of action.

The existing Prado Road Bridge was also previously deemed functionally obsolete, as the existing two-lane bridge has no bicycle or pedestrian facilities and recent traffic studies indicate that the bridge lacks adequate width to accommodate existing and projected future multimodal (vehicular/bicycle/pedestrian) traffic demands. While bridge projects are high-cost investments and have a typical design life of 50-100 years, both Caltrans Local Assistance Program Guidelines (LAPG) and American Association of State Highway and Transportation Officials (AASHTO) guidance identify a 20-year planning horizon as a prudent basis for design of new non-freeway bridge facilities. This 20-year timeline is to ensure that that the replacement facility accommodates projected traffic demands within a reasonable design horizon and that public funds are being expended appropriately. The City’s General Plan Land Use and Circulation Element (LUCE) identifies anticipated land use changes and needed transportation improvements throughout the city through a build-out horizon year of 2035 (16 years from today). Thus, horizon year 2035 traffic forecasts are used as the basis for determining future operational needs for the replacement Prado Road Bridge.

Due to the close proximity of the bridge to the existing Prado Road/South Higuera Street intersection—180 feet east of the bridge—the bridge operates as a functional

part of the intersection and needs to accommodate vehicle queues and roadway geometric transitions to/from the intersection. For this reason, the required cross section for the replacement bridge is largely determined by the future operational needs at the Prado Road/South Higuera Street intersection. The City's Circulation Element establishes a minimum Level of Service (LOS) of D for signalized intersections outside of the downtown area. City traffic operations standards also establish vehicle queuing thresholds for intersections, where queues that spill back from turn pockets or block upstream driveways are to be avoided.

The future year traffic forecasts developed for the City's LUCE and subsequent Environmental Impact Reports (EIR) for development projects include Average Daily Traffic (ADT) volumes along Prado Road between US 101 and South Higuera increasing from existing 8,067 vehicles per day to 34,900 vehicles per day by the year 2035. To maintain acceptable traffic operations through 2035, the Prado Road overall corridor requires widening to five lanes (including a center median/turn lane) and the Prado Road/South Higuera intersection is to remain signal-controlled with widening to provide four vehicular through lanes (two in each direction), dual left-turn lanes and a dedicated right-turn lane at each approach. This results in future seven-lane cross sections at each leg of the intersection, including the west leg which would need to extend onto the Prado Road Bridge.

A Project Study Report (PSR) prepared for the US 101/Prado Road Interchange (approved April 2018) states that Caltrans will support consideration of a partial-access interchange (overcrossing of US 101 and new northbound ramps only) through year 2035, with ultimate plans to install southbound ramps beyond year 2035. Using traffic forecasts from the Prado Interchange PSR, a traffic operations analysis was conducted for the Prado Bridge Replacement Project for year 2035 conditions with only a partial-access interchange in place at US 101/Prado Road. Based on this analysis, to maintain acceptable traffic operations the Prado Road corridor would still require widening to five lanes (including a center median/two-way left turn lane), but the Prado Road/South Higuera intersection would operate acceptably with signal-control and widening to provide five lanes at the north/south/east legs and six lanes at the west leg. The resulting lane configuration at the west leg—which is carried across the replacement Prado Road Bridge—would include a six-lane cross section: four through lanes (two in each direction), one left-turn lane, and a dedicated right-turn lane. The proposed replacement bridge reflects this minimum cross section with six vehicular travel lanes. The proposed replacement bridge does not preclude the ultimate plans for seven lanes at each leg of the Prado Road/South Higuera Street intersection,

as identified in the LUCE and previous development project EIRs, but does not widen to this configuration at this time.

In total, the recommended replacement bridge has a typical cross-section that includes four 12-foot-wide through lanes, one 12-foot-wide left-turn lane, one 12-foot-wide right-turn lane, two 5-foot-wide shoulders/bike lanes, and a 2-foot-wide striped median, for a total curb-to-curb width of 84 feet. Consistent with the City's Bicycle Transportation Plan, which identifies future plans for Class I pedestrian/bicycle paths on both sides of the Prado Road corridor, the replacement bridge cross section includes two 13-foot-wide Class I paths (including buffer/shoulder width) and 2-foot-wide concrete barrier rails on each side, resulting in an overall proposed bridge width of 114 feet.

Existing traffic volumes currently exceed the capacity of the single northbound to westbound left-turn lane at the Prado Road/South Higuera intersection, which causes vehicle queues to spill back into the adjacent through lane. Installation of second northbound to westbound left-turn lane is warranted at this location, and this improvement is required mitigation for several approved development projects in the city. While funds have been collected for this improvement as part of the City's TIF program, this cannot be implemented until the Prado Road Bridge is widened to accommodate a second westbound receiving lane. The City plans to implement intersection improvements to accommodate the second northbound to westbound left-turn lane, improve pedestrian/bicycle safety crossing the intersection, and extend the Bob Jones Trail to the north under the Prado Road Bridge concurrently with the bridge replacement project. While the related intersection and trail improvements are not eligible for HBP funding participation, they are included in the project description for the purpose of environmental review and permitting.

1.2. Project Purpose and Need

The existing Prado Road Bridge over San Luis Obispo Creek has been classified as structurally deficient. The bridge has also previously been deemed functionally obsolete, as the existing two-lane bridge lacks any pedestrian or bicycle facilities and has insufficient width to accommodate existing and future multimodal traffic demands. The City and Caltrans have concurred that bridge replacement is an appropriate action to address these deficiencies. The primary purpose of the proposed project is to replace the structurally deficient bridge, with secondary consideration for addressing the functional obsolescence of this facility. Additional goals of the project are to provide bicycle and pedestrian facilities across the bridge, improve multimodal

operations at the Prado Road/South Higuera Street intersection, and improve connectivity to the adjacent Bob Jones Bike Trail, with the option to include a north-south extension of that trail under Prado Road. The need of the project is to provide a structurally adequate bridge, that safely accommodates expected multi-modal traffic.

1.3. Existing Bridge

The existing bridge is a three-span, reinforced concrete, “T” Beam Bridge, built in 1957, spanning San Luis Obispo Creek (Figures 1 and 2). The existing bridge is approximately 123 feet long by 26.5 feet wide and is located approximately 180 feet west of the western stop bar of the intersection of Prado Road and South Higuera Street in the City of San Luis Obispo.

The most recent Caltrans Structure Maintenance routine inspection report for this bridge written on May 1, 2015 notes the following:

- Soffit cracks in spans 1 and 2 with efflorescence and leaching. Mild corrosion is evident from the leaching; and,
- Transverse deck cracking persist throughout the deck surface. There are also a few heavy cracks near Abutment 1 ranging from short to approximately 3 feet in length.

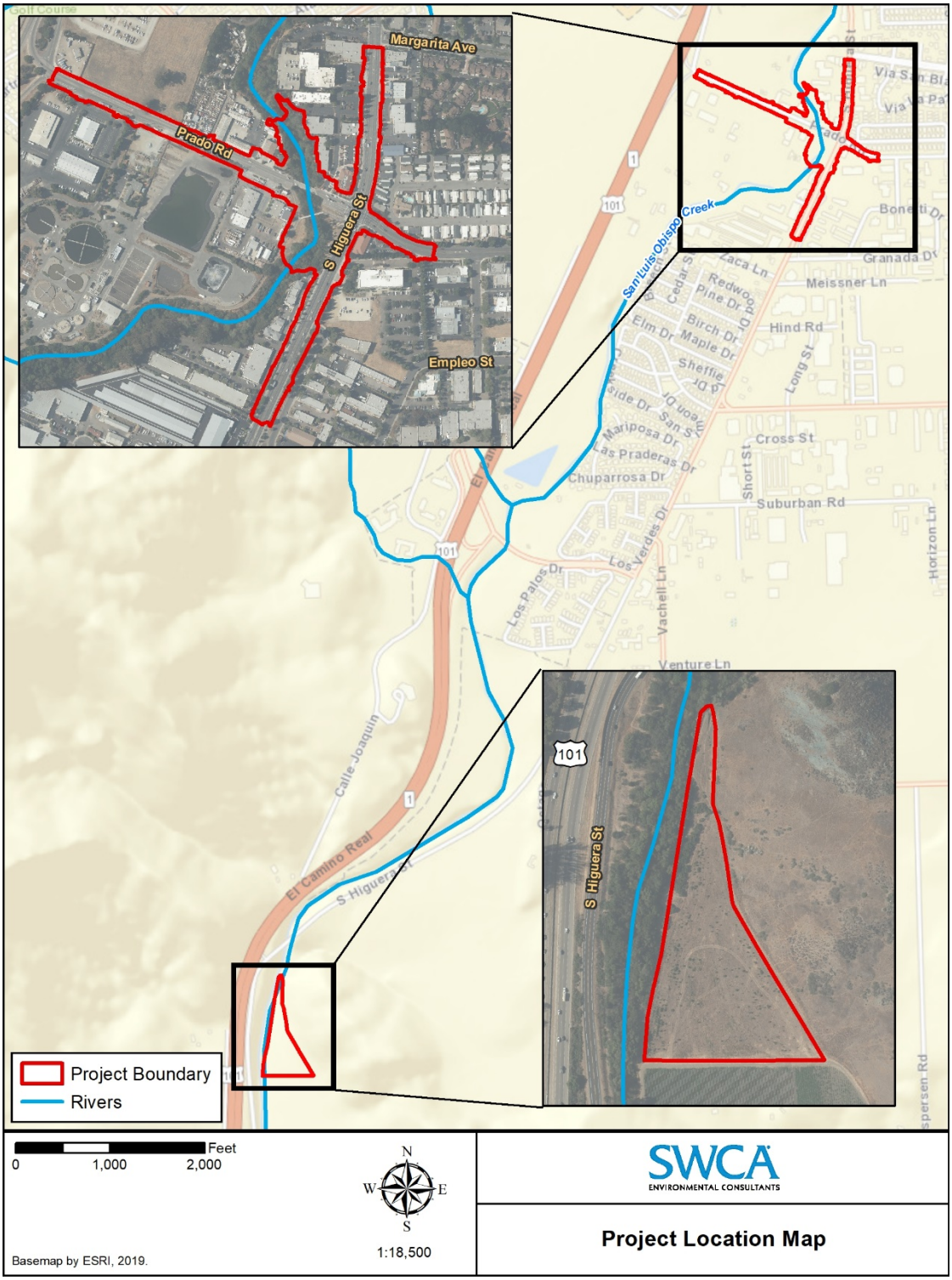
The latest report for the Prado Road Bridge gave the structure a Sufficiency Rating (SR) of 73.5, with a status of “Structurally Deficient" (SD). The SD status applies to this bridge because of the amount of cracking in the deck of the bridge.

1.4. Bridge Replacement (Proposed Project)

The City proposes to increase the total bridge width from 26.5 feet to 114 feet through installation of a replacement structure that would widen the existing bridge location on both the north and south ends. Replacing the existing bridge with a new simple span precast concrete I girder bridge (Alternative 3) is the recommended preferred alternative. The project also includes widening to the north and south along Prado Road between the bridge at the Prado Road/South Higuera intersection to conform with the replacement bridge section and widening along the west side of South Higuera at the Prado Road/South Higuera intersection to accommodate a second northbound-to-westbound left-turn lane and improve bicycle/pedestrian facilities.

Figure 1: Project Vicinity Map

Figure 2: Project Location Map



The Bob Jones Trail is an existing Class I bicycle/pedestrian path that runs along San Luis Obispo Creek and currently terminates at the southwest corner of the Prado Road/South Higuera Street intersection. The City's Bicycle Transportation Plan includes a continuation of the Bob Jones Bike Path from its current terminus along the creek north to Madonna Road, including a connection to the north side of Prado Road. Therefore, the City also proposes to construct a bike path extension underneath Prado Road on the east bank of the creek with the proposed bridge construction.

1.4.1. Construction Activities

1.4.1.1. CONSTRUCTION SEQUENCE/SCHEDULE AND TIMING

Construction is anticipated to begin in FY2021/22 and is expected to take approximately 18 to 24 months to complete. Actual phasing and schedule of construction activities is to be finalized by the City and construction Contractor. However, construction of the bridge is expected to occur in two or three stages to preserve utility services and vehicular access across the bridge during construction activities. For example, the first stage could include construction of the southern portion of the new bridge and bike path while traffic remains on the existing structure. Traffic could then be moved to the newly constructed southern portion of the bridge. The second stage could include construction of the new structure to the north of the existing bridge and the gravity sewer line could be relocated to the newly widened northern portion. After these phases are complete, Then, the third stage of construction activities could include demolition of the existing bridge and completion of the new bridge and bike path extension. Alternatively, the contractor may elect to support the existing sewer main with falsework to eliminate one of the stages of construction.

Where feasible, construction activities would be conducted to maintain one lane of traffic in each direction (for a total of two lanes of traffic) during peak travel times and on weekends. During non-peak hours, night work, or other periods where construction activities do not allow sufficient width to retain vehicular access, Prado Road may be temporarily closed to facilitate work performed at abutments, placement of the precast girders, relocation of utilities, and moving traffic during various stages of work. Notice would be provided to adjacent businesses during periods of full closure. The bridge replacement project will require short-term temporary impacts to the terminus of the Bob Jones Trail near the Prado Road/South Higuera Street Intersection. However, access to the Bob Jones Trail is anticipated to be maintained throughout construction. Notice will be provided prior to closures.

A summary of construction equipment anticipated to be required for project construction is provided in Table 1, below.

Table 1: Construction Equipment

Equipment	Construction Purpose
Air compressor	Concrete removal + finishing work
Backhoe	Earthwork construction + clearing and grubbing
Bobcat	Fill distribution
Bulldozer/loader	Earthwork construction + clearing and grubbing
Cold planer	Asphalt milling machine used to remove asphalt concrete
Compaction equipment	Soil manipulation
Concrete truck and pump	Concrete placement
Crane	Rebar cages + pile installation + resetting of Bob Jones Bike Path bridge + setting of precast girders
Debris bin	Debris storage and containment
Drill rig	Pile installation
Dump truck	Fill material delivery + asphalt concrete removal
Excavator	Soil manipulation
Flatbed truck	Material handling and delivery
Front-end loader	Dirt or gravel manipulation
Grader	Ground leveling
Haul truck	Earthwork construction + clearing and grubbing
Hoe ram	Concrete removal
Holding tanks	Slurry storage for pile installation
Hydraulic hammer	Demolition / concrete removal
Jackhammer	Demolition / concrete removal
Mixing tanks	Slurry mixing for pile installation
Paving equipment	Approach roadway paving
Recirculating pumps	Slurry pumping for pile installation
Roller / compactor	Earthwork construction
Truck with seed sprayer	Landscaping
Water truck	Earthwork construction + dust control

1.4.1.2. CLEARING AND GRUBBING

This will include removing portions of trees, bushes, and landscaping in conflict with construction access and activities. The work will be within the approved project limits of disturbance. To mitigate for impacts to habitat, a proposed mitigation site has been identified along South Higuera Street downstream of the bridge (see Project Vicinity and Location Map).

1.4.1.3. CREEK FLOW AND GROUNDWATER HANDLING

San Luis Obispo Creek could have some water flowing through the channel during construction. In that case, dewatering and a diversion of the water would be required to accommodate construction activities within the creek. Channel flow would be diverted through the use of a coffer dam or other temporary dewatering measures (e.g., pipes, sandbags, temporary fill). A clean gravel berm may be constructed upstream and downstream of the project site with a culvert connection through the site. The culvert would intercept the water upstream and release the water downstream of the construction activities, or the water could be pumped from the upstream side of the work to the downstream side of the creek. If groundwater is encountered, groundwater would be pumped to sediment control baffles or basins and then released as clean flow into the downstream area. A copy of the Diversion/Dewatering Plan is located in Appendix E

1.4.1.4. EXCAVATION

Excavation of the creek banks at Prado Road would be required to accommodate the new concrete abutments and any associated retaining walls. The existing abutments would serve as temporary shoring for the construction of the new abutments. Any excess material would be hauled off-site to an approved disposal facility, as necessary.

1.4.1.5. PILE INSTALLATION

The new bridge abutments would be supported on cast-in-drilled-hole (CIDH) piles. Holes for the piles would be drilled, excavated soil would be removed and hauled off-site, a reinforcing steel cage would be placed in the hole, and the hole would be filled with concrete. When the CIDH piles are constructed for the abutments, steel piles for adjacent soldier pile retaining walls would also be installed. The steel piles would be placed in drilled holes and the excess excavated material would be hauled off-site to an approved disposal facility.

1.4.1.6. ABUTMENT, RETAINING WALLS, AND BIKE PATH

Once the CIDH piles and soldier piles are in place, the abutments would be formed and reinforcing steel and concrete would be placed. The solider pile wall would be constructed with timber or concrete lagging and tie backs, if necessary. Concrete facing of the lagging may be provided for aesthetic purposes. After the abutment and solider pile walls are constructed, concrete cut-off walls and portions of the bike path that extend within the flow limits would be placed and paved with concrete.

1.4.1.7. ROCK SLOPE PROTECTION

Installation of rock slope protection is anticipated along the creek banks at the ends of the retaining wall limits. The toe of the creek bank would be excavated to create a toe for the rock slope protection, filter fabric would be placed in the excavated areas and along a portion of the creek banks, and rocks would be placed in a stacked fashion. Soil would then be placed in the voids of the rock slope protection and the rock slope protection would be planted with willow cuttings.

1.4.1.8. PRE-CAST CONCRETE GIRDERS

The bridge superstructure would consist of precast concrete I girders. Precast girders are typically cast off-site and delivered to the construction site. Girders would be lifted into place by cranes; given the girder lengths and size, two cranes are anticipated to be needed for this operation.

1.4.1.9. EXISTING BRIDGE REMOVAL

After traffic has been relocated to newly constructed portions of the bridge or with temporary detouring, the existing concrete bridge would be removed. Demolition debris would be collected, kept separate from active water flows, and hauled off-site to an approved disposal facility.

1.4.1.10. BOB JONES BIKE PATH RELOCATION

The widened bridge structure is expected to require relocation of the existing Bob Jones Bike Path bridge spanning San Luis Obispo Creek approximately 125 feet south of the Prado Road Bridge. It is expected that the eastern end of the existing Bob Jones Bike Path bridge would be shifted southward to accommodate Prado Road widening and the proposed southerly sidewalk connection to the trail. Rotation at the easterly end of the bike path bridge is expected to require new CIDH piling to be placed at the east abutment and would require the widening/modification of the existing abutments. It is anticipated that the existing prefabricated bridge could be lifted by crane and temporarily moved then placed onto the realigned abutments once modifications are completed.

1.4.1.11. ROADWAY IMPROVEMENTS

Typical staged construction and traffic handling details are anticipated to shield work and move traffic through the work area per the City/Contractor agreed upon schedule. In the work zones the adjacent roadway modifications would be completed while traffic is maintained in or diverted to non-work areas. Curb, gutter, sidewalk, and storm drainage facilities would be installed, and Prado Road would be reconstructed

with new Class 2 Aggregate Base and Hot Mix Asphalt. Traffic handling to ensure public and worker safety during construction would be provided by the Contractor.

1.4.1.12. UTILITY RELOCATION

Multiple utilities currently cross the project site, including overhead electrical, telephone, and cable television lines, as well as a gravity sewer, water, recycled water, and gas lines that are supported by the bridge deck. The gravity sewer line may need to be temporarily shut-off for very short durations and during non-peak use, but otherwise would need to remain in operation throughout construction activities. Due to design of the gravity sewer system in a built environment and near the recipient Water Reclamation Facility (a few hundred feet to the west), the vertical profile of the sewer line cannot be altered. However, the horizontal location of the sewer line may be altered slightly to be aligned between bridge superstructure support girders. The existing water, recycled water, and gas lines could be relocated to the new bridge location with supports. Overhead electrical, telephone and cable television lines could be relocated to either new overhead alignments or conduits placed in the bridge concrete barrier rail.

1.4.1.13. HYDRAULICS

A hydraulics analysis of San Luis Obispo Creek was completed using the City's updated HEC-RAS model. The existing gravity sewer line currently constricts the flow of water through the bridge and the water backs up against the sewer line before flowing underneath the bridge. The project would increase the channel opening under the bridge crossing and lower the water surface elevation for the 50- and 100-year flows compared to the existing conditions. Rock slope protection would also be placed in the creek to protect the wall and embankment fills.

1.5. Summary of Consultation to Date

May 16, 2019: SWCA Environmental Consultants (SWCA) submitted a request, through the USFWS online Information for Planning and Consultation (IPaC) species list system, for an updated official USFWS species list for the project area. The official list was received the same day.

May 16, 2019: Using the NMFS GoogleEarth Species List Tool, SWCA submitted an email request for an official NMFS species list for the project area. The official list was received the same day.

March 9, 2020: SWCA submitted a request, through the USFWS online IPaC species list system, for an updated official USFWS species list for the project area. The updated official list was received the same day; this updated USFWS species list is included in Appendix A.

March 9, 2020: Using the NMFS GoogleEarth Species List Tool, SWCA submitted an email request for an updated official NMFS species list for the project area. The updated official list was received the same day; this updated NMFS species list is included in Appendix A.

1.6. Document Preparation History

This BA was prepared for the USFWS and NMFS by SWCA Environmental Consultants, in San Luis Obispo, California.

BA Preparation and Assembly: Senior Biologist Geoff Hoetker (805.543.7095 ext. 6087, ghoetker@swca.com)

BA Maps and Graphics: GIS Specialist Kevin Howen (805.543.7095 ext. 6830, khowen@swca.com) prepared project maps and graphics with ArcGIS™

BA Peer Review: Senior Technical Editor Jaimie Jones (805.543.7095 ext.6815, jmjones@swca.com)

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Chapter 2. Study Methods

2.1. Listed or Proposed Species Potentially Occurring in the Biological Study Area

SWCA biologists initiated an updated review of potentially occurring FESA listed and proposed species for the project by querying the USFWS IPaC system (USFWS 2020), the NMFS GoogleEarth Species List Tool (NMFS 2020), and the CNDDB (CNDDB 2020) (see Appendix A).

The results from the updated USFWS IPaC, NMFS, and CNDDB queries for regional federally protected species are provided in Table 2 (plants) and Table 3 (animals). While marsh sandwort (*Arenaria paludicola*) and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) were not included on the official list received from USFWS, these species appeared on the CNDDB query and therefore have been included for consideration. No new federally listed species were included in the most recent 2020 USFWS and NMFS official species lists compared to the 2019 lists.

Table 2: Listed or Proposed Plant Species and Critical Habitat Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/CRPR	General Habitat Description	Habitat Present/ Absent	Rationale
Morro manzanita	*Arctostaphylos morroensis*	FT/--/1B.1	Perennial evergreen shrub that occurs in chaparral, cismontane woodland, coastal dunes (pre-Flandrian), and coastal scrub. On Baywood fine sands usually with chaparral associates between 5–205 meters. Typical blooming period is between December–March.	A	**Suitable Conditions Absent:** The BSA does not support chaparral, cismontane woodland, coastal dunes (pre-Flandrian), or coastal scrub habitat suitable for Morro manzanita. No manzanita species were observed in the BSA. The project would have no effect on Morro manzanita.
marsh sandwort	*Arenaria paludicola*	FE/SE/1B.1	Annual herb that occurs in freshwater marshes and wetlands. Growing up through dense mats of cattails, rushes and tule rushes in freshwater marsh between 10–170 meters. Typical blooming period is between March–April.	A	**Suitable Conditions Absent:** The BSA does not support suitable marsh habitat for marsh sandwort. Species was not observed during the springtime floristic surveys and is not expected to occur. The project would have no effect on marsh sandwort.
California jewelflower	*Caulanthus californicus*	FE/SE/1B.1	Annual herb that occurs in sandy soils in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland habitats. Elevation: 61-1,000 meters. Typical blooming period is between February-May.	A	**Suitable Conditions Absent:** The BSA is not located within the appropriate elevation range for California jewelflower. The BSA does not support sandy soils, chenopod scrub, pinyon and juniper woodland, or valley and foothill grassland habitats suitable for this species. Species was not observed during the springtime floristic surveys and is not expected to occur. The project would have no effect on California jewelflower.

Common Name	Scientific Name	Status Federal/ State/CRPR	General Habitat Description	Habitat Present/ Absent	Rationale
Chorro Creek bog thistle (or San Luis Obispo fountain thistle)	*Cirsium fontinale* var. *obispoense*	FE/SE/1B.2	Perennial herb that occurs in serpentinite seeps and drainages in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Elevation: 35-385 meters. Typical blooming period: February-September.	A	**Suitable Conditions Absent:** The BSA does not support serpentinite seeps or drainages, chaparral, cismontane woodland, coastal scrub, or valley and foothill grassland habitat suitable for Chorro Creek Bog thistle/ San Luis Obispo fountain thistle. Species was not observed during the springtime floristic surveys and is not expected to occur. The project would have no effect on Chorro Creek Bog thistle/ San Luis Obispo fountain thistle.
Pismo clarkia	*Clarkia speciosa* ssp. *immaculata*	FE/SR/1B.1	An annual herb that occurs in chaparral (margins and openings), cismontane woodland, and valley and foothill grassland habitats in sandy soils. Found in San Luis Obispo County between 25–185 meters. Typical blooming period is between May–July.	A	**Suitable Conditions Absent:** The BSA does not support chaparral, cismontane woodland, or valley and foothill grassland habitats suitable for Pismo clarkia. Species was not observed during the springtime floristic surveys and is not expected to occur. The project would have no effect on Pismo clarkia.
Indian Knob mountainbalm	*Eriodictyon altissimum*	FE/SE/1B.1	A perennial evergreen shrub found in chaparral (maritime), cismontane woodland, and coastal scrub habitat in sandstone soil. Found in San Luis Obispo County. Elevation range: 80–270 meters. Typical blooming period is between March–June.	A	**Suitable Conditions Absent:** The BSA is not located within the appropriate elevation range and does not support sandstone soil, chaparral, cismontane woodland, or coastal scrub habitats suitable for Indian Knob mountainbalm. Species was not observed during the springtime floristic surveys and is not expected to occur. The project would have no effect on Indian Knob mountainbalm.

Common Name	Scientific Name	Status Federal/ State/CRPR	General Habitat Description	Habitat Present/ Absent	Rationale
spreading navarretia	*Navarretia fossalis*	FT,CH/--/1B.1	Annual herb that occurs in chenopod scrub, shallow freshwater marshes and swamps, playas, and vernal pool habitats between 30–655 meters. Typical blooming period is between April–June. The only documented occurrence of this species is from 1953 in Creston, 7.6 miles northeast of the project site.	A	**Suitable Conditions Absent:** The BSA is located outside of the known range of this species and suitable habitat is not present. The BSA does not occur within a critical habitat unit for this species. Species was not observed during the springtime floristic surveys and is not expected to occur. The project would have no effect on spreading navarretia or its critical habitat.

General References:
RareFind 5 search for five-mile radius from project site, CDFW CNDDB (Accessed March 2019, updated March 2020); CDFW 2010a; Sawyer et al 2009.

Status Codes: Federal Endangered (FE); Federal Threatened (FT); Federal Candidate (FC); Federal Delisted (FD); Critical Habitat Designated (CH); State Endangered (SE); State Threatened (ST); State Rare (SR); State Candidate Species (SC)

California Rare Plant Rank (CRPR):
1A = Plants presumed extirpated in California and either rare or extinct elsewhere
1B = Plants rare, threatened, or endangered in California and elsewhere
2A = Plants presumed extirpated in California but common elsewhere
2B = Plants rare, threatened, or endangered in California, but more common elsewhere
3 = Plants about which more information needed (review list)
4 = Plants of limited distribution (watch list)

Threat Rank:
_.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
_.2 = Fairly endangered in California (20-80% occurrences threatened)
_.3 = Not very endangered in California (<20% of occurrences threatened, or no current threats known)

Absent [A] – suitable habitat is absent and no further study is needed; Habitat Present [HP] – suitable habitat is present in the BSA; Present [P] – the species is confirmed present in the BSA; Critical Habitat [CH] – the BSA is located within federally designated critical habitat, but not necessarily suitable habitat.

Table 3: Listed or Proposed Animal Species and Critical Habitat Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Invertebrates					
vernal pool fairy shrimp	*Branchinecta lynchi*	FT,CH/--/--	Occurs in vernal pool habitats including depressions in sandstone, to small swale, earth slump, or basalt-flow depressions with a grassy or, occasionally, muddy bottom in grassland.	A	**Suitable Conditions Absent:** The BSA does not support vernal pool habitat. The BSA does not occur within a critical habitat unit for this species. Species was not observed during field surveys. The project would have no effect on vernal pool fairy shrimp or its critical habitat.
Kern primrose sphinx moth	*Euproserpinus euterpe*	FT, PCH/--/--	Found in the walker basin, Kern County and several other scattered locations (Carrizo Plain, Pinnacles National Park). Larval food plant is kern primrose (*Oenothera contorta epilobioides*).	A	**Suitable Conditions Absent:** The BSA does not support the host plant and is outside the documented range of this species. The BSA does not occur within a proposed critical habitat unit for this species. Neither species nor host plant were observed during field surveys. The project would have no effect on Kern primrose sphinx moth or its proposed critical habitat.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Fish					
south-central California coast steelhead DPS	*Oncorhynchus mykiss*	FT,CH/--/ SSC	Occurs in cold water anadromous streams and coastal lagoons with clear, cool water with abundant in-stream cover, well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio. Federal DPS listing refers to runs in coastal basins from Monterey to San Luis Obispo County.	HP, P (inferred), CH	**Suitable Conditions Present**: Suitable habitat that satisfies steelhead PCE 3 (freshwater migration corridor) and possibly steelhead PCEs 1-2 (freshwater spawning and rearing sites) occur in San Luis Obispo Creek within the BSA. The creek is known to support steelhead and the creek is designated critical habitat for steelhead. The project may affect, and is likely to adversely affect, south-central California coast steelhead and its critical habitat. Avoidance and minimization measures recommended.
Amphibians					
California tiger salamander	*Ambystoma californiense*	FT,CH/ST/--	Requires underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	A	**Suitable Conditions Absent:** The BSA does not support vernal pool habitat and is outside the current documented range of this species. The BSA does not occur within a critical habitat unit for this species. Species was not observed during field surveys. The project would have no effect on California tiger salamander or its critical habitat.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
California red-legged frog	*Rana draytonii*	FT,CH/--/SSC	Occurs in aquatic habitats with little or no flow and surface water depths to at least 2.3 feet. Presence of fairly sturdy underwater supports such as cattails.	HP	**Suitable Conditions Present:** The BSA supports potentially suitable freshwater habitat for California red-legged frog within San Luis Obispo Creek. The BSA does not occur within a critical habitat unit for this species. Species was not observed during field surveys, but the presence of this species is inferred based on the existing habitat conditions and previously documented occurrences in San Luis Obispo Creek. The project may affect, and is likely to adversely affect, California red-legged frog. There would be no effect on California red-legged frog critical habitat. Avoidance and minimization measures recommended.
Reptiles					
blunt-nosed leopard lizard	*Gambelia sila*	FE/SE/FP	Occurs in semiarid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, typically on sandy, gravelly, or loamy substrate and sometimes on hardpan. Occur in areas where abundant rodent burrows are available and are rare or absent in dense vegetation or tall grass.	A	**Suitable Conditions Absent:** The BSA does not support suitable soils or habitat for blunt-nosed leopard lizard. Species was not observed during field surveys. The project would have no effect on blunt-nosed leopard lizard.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Birds					
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT,PCH, MBTA/ SE/FGC	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	HP	**Suitable Conditions Present:** The BSA supports suitable riparian nesting or foraging habitat for this species within the San Luis Obispo Creek riparian corridor. Species was not observed during field surveys. The BSA does not occur within a proposed critical habitat unit for this species. Avoidance and minimization measures recommended. The project may affect, but is not likely to adversely affect, western yellow-billed cuckoo. There would be no effect on western yellow-billed cuckoo proposed critical habitat.
southwestern willow flycatcher	*Empidonax traillii extimus*	FE,CH, MBTA/ SE/FGC	Occurs in riparian woodlands in southern California, with breeding populations occurring north to the Santa Ynez River, Kern River, and Independence on the Owns River.	HP	**Suitable Conditions Present:** The BSA may support suitable nesting/ foraging habitat for this species within the San Luis Obispo Creek riparian corridor; however, the BSA is not located within the known current range of this species. Species was not observed during field surveys. The BSA does not occur within a critical habitat unit for this species. Avoidance and minimization measures recommended. The project may affect, but is not likely to adversely affect, southwestern willow flycatcher. There would be no effect on southwestern willow flycatcher critical habitat.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
California condor	*Gymnogyps californianus*	FE,CH,MBTA/ SE/FGC	Requires vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons supporting clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	A	**Suitable Conditions Absent:** The BSA does not support suitable foraging or nesting habitat for this species. The BSA does not occur within a critical habitat unit for this species. The BSA is outside the documented current range of the California condor. Species was not observed during field surveys. The BSA does not occur within a critical habitat unit for this species. The project would have no effect on California condor or its critical habitat.
California clapper rail	*Rallus longirostris obsoletus*	FE,MBTA/ SE/FGC	Occurs in salt-water and brackish marshes traversed by tidal estuaries near San Francisco Bay. Associated with abundant growths of pickleweed but feeds away from cover on invertebrates from mud-bottomed estuaries.	A	**Suitable Conditions Absent:** The BSA does not support suitable salt water marsh habitat for this species. Additionally, the BSA is outside the documented range of this species. Species was not observed during field surveys. The project would have no effect on California clapper rail.
least Bell's vireo	*Vireo bellii pusillus*	FE,CH,MBTA/ SE/FGC	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, coyote brush and mesquite.	HP	**Suitable Conditions Present:** The BSA supports suitable nesting/ foraging habitat for this species within the San Luis Obispo Creek riparian corridor; however, the BSA is not located within the known current range of this species. Species was not observed during field surveys. The BSA does not occur within a critical habitat unit for this species. Avoidance and minimization measures recommended. The project may affect, but is not likely to adversely affect, least Bell's vireo. There would be no effect on least Bell's vireo critical habitat.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Mammals					
giant kangaroo rat	*Dipodomys ingens*	FE/SE/--	Occurs in annual grasslands on the western side of the San Joaquin Valley, marginal habitat in alkali scrub. Need level terrain and sandy loam soils for burrowing.	A	**Suitable Conditions Absent:** The BSA does not support suitable habitat and is outside document range for this species. Species was not observed during field surveys. The project would have no effect on this species.
San Joaquin Kit Fox	*Vulpes macrotis mutica*	FE / ST / --	Occurs in annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	A	**Suitable Conditions Absent:** The BSA does not support suitable nesting or foraging habitat for this species. Species was not observed during field surveys. The project would have no effect on this species.

General References:
RareFind 5, two-mile radius search from BSA: (CNDDB accessed March 2019, updated March 2020).
USFWS IPaC Official Species List (Accessed March 2019, updated March 2020).
NMFS Official Species List (Accessed March 2019, updated March 2020).

Status Codes: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed Threatened (FPT); Federal Candidate (FC); Federal Delisted (FD); Under Review (UR); Proposed Critical Habitat (PCH); Protected by the Federal Bald and Golden Eagle Protection Act (BGEPA); Protected by Federal Migratory Bird Treaty Act (MBTA); State Endangered (SE); State Threatened (ST); Candidate State Threatened (CT); Candidate State Endangered (CE); State Delisted (SD); Fully Protected (FP); Protected under CEQA (no other legal protection) (CEQA); California Species of Special Concern (SSC); CDFW Watch List species (WL) – Taxa that were previously SSCs, no longer merit SSC status, but for which there is concern, CDFW Watch List species are included on the CNDDB Special Animals List and are protected under CEQA; Included on CNDDB Special Animals List (also protected under CEQA) (SA); Fully Protected (FP); Protected by California Fish and Game Code Sections 3503 and 3503.5 (FGC).

Absent [A]-suitable habitat is absent; no further study needed; Habitat Present [HP]-suitable habitat is present in the BSA; Present [P]-the species is confirmed present in the BSA; Critical Habitat [CH] – the project footprint is located within federally designated critical habitat but does not necessarily mean that suitable habitat is present.

2.2. Studies Required

Prior to conducting any field surveys, SWCA performed a literature and database review to determine which sensitive species have been documented within the vicinity of the project. This included a five-mile radius query of the CNDDB, CNPS Electronic Inventory, and review of environmental documents that have been prepared for other projects in the general area. On March 9, 2020, SWCA used the CDFW RareFind 5 internet application to generate a species list from the CNDDB for the following U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles: Morro Bay North, Atascadero, Santa Margarita, Morro Bay South, San Luis Obispo, Lopez Mountain, Port San Luis, Pismo Beach, and Arroyo Grande NE (CNDDB 2020); SWCA also obtained official species lists from USFWS and NMFS (see Appendix A).

Because the species lists are regional in nature, an analysis of the geographic range and habitat requirements of each listed species was conducted to determine which species have the potential to occur in or near (i.e., within five miles of) the Biological Study Area (BSA). Because the various query results cover such a large geographic area, further evaluation was conducted to determine which species have the potential to occur within the project site and immediate vicinity. The evaluation considered the general habitat requirements of each species, the type and quality of habitat observed on-site, and which species have been documented within a five-mile radius of the project site. Species were eliminated from further consideration if the project site does not include the general habitat requirements (e.g., habitat type, elevation, soils), or if the project site is outside the known geographic distribution or documented range of that species. For those instances where general habitat requirements are present to some degree, focused studies were conducted to determine presence/absence of the species. The professional judgement and regional expertise of the biologists who prepared this study were also utilized to determine the potential for occurrence of federally listed species within the BSA.

Botanical surveys for sensitive plants and reconnaissance wildlife surveys were conducted by SWCA biologists on May 10, 2015; April 29, 2019; and June 4, 2019 (refer to Table 3). The botanical surveys were floristic (i.e., conducted when target species would be flowering and identifiable) following the "*Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*" (USFWS 2000) and "*Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*" (California Department of Fish and Wildlife [CDFW 2018]. Plants were identified with

dichotomous keys using "*The Jepson Manual: Vascular Plants of California*" (Baldwin et al. 2012). A list of species observed is included as Appendix C and photo documentation of the project area is included as Appendix D.

Although no intensive survey methods (e.g., seine-netting or dip-netting) were recently conducted for the currently proposed project, San Luis Obispo Creek is known to support south-central California coast steelhead and the presence of this species within the BSA is inferred. In addition, the project's BSA is within federally designated critical habitat for steelhead.

Although protocol-level surveys were not conducted for California red-legged frog (*Rana draytonii*), this species is inferred to be present in San Luis Obispo Creek. A Programmatic Biological Opinion has been issued to Caltrans for California red-legged frog (*Rana draytonii*). For the purposes of USFWS formal consultation for California red-legged frog, Caltrans is requesting concurrence with the determinations made in this BA using the current Programmatic Biological Opinion (USFWS 2011).

2.3. Personnel and Survey Dates

Table 4 summarizes biological survey efforts conducted to date.

Table 4: Survey Tasks, Dates, Personnel, and Methodology

Study or Survey	Date	Personnel	Methodology
Floristic Botanical Survey; Reconnaissance Wildlife Survey	May 10, 2015	Barrett Holland	USFWS (2000) and CDFW (2009) for plants; no formal protocol for wildlife.
Floristic Botanical Survey; Reconnaissance Wildlife Survey	April 29, 2019	John Moule	USFWS (2000) and CDFW (2018) for plants; no formal protocol for wildlife.
Floristic Botanical Survey; Reconnaissance Wildlife Survey	June 4, 2019	John Moule	USFWS (2000) and CDFW (2018) for plants; no formal protocol for wildlife.
Jurisdictional Determination Survey	June 19, 2019	Lauren Brown	USACE Arid West OHWM Data Sheet (Curtis and Lichvar 2010)

2.4. Agency Coordination and Professional Contacts

No additional agency coordination or professional contacts have been conducted to date.

2.5. Limitations That May Influence Results

Sensitive 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. The botanical surveys conducted in support of this BA were timed to accommodate the flowering period of the species considered in this document. The botanical surveys were comprehensive, and all plant species encountered were identified to the lowest possible taxonomic level, which is required for accurate identification and reporting.

Sensitive wildlife species with the potential to occur in the project site may be transient and/or migratory species (e.g. steelhead, migratory birds). The population size and locations of sensitive species may fluctuate through time. Because of this, the data collected for this BA represents a "snapshot" in time and may not reflect actual future conditions.

The existing bridge and trees within the project site were inspected for nesting birds. However, even though no nesting birds were observed, birds may establish nests within the project limits prior to the onset of construction. Nesting bird surveys are time sensitive and are often repeated several times before the onset of construction activities, especially if construction will occur during the typical nesting bird season (February 1 to September 30).

No formal protocol surveys were conducted for those sensitive wildlife species for which there are established survey protocols. Where applicable, the presence of certain sensitive wildlife species has been inferred within the BSA.

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Chapter 3. Results: Environmental Setting

3.1. Description of Existing Biological and Physical Conditions

3.1.1. Biological Study Area (BSA)

The BSA is defined as the area (land) that may be directly, indirectly, temporarily, or permanently impacted by construction, construction-related activities, and vehicles. For the purposes of this project and Section 7 consultation, the term BSA is equivalent to the term "action area." The BSA is approximately 12.61 acres in size and includes section of roadway along Prado Road, between South Higuera Street and Elks Lane, and includes areas beyond the City ROW, including the San Luis Obispo Creek channel and a portion of the Bob Jones Bike Path (Figure 3).

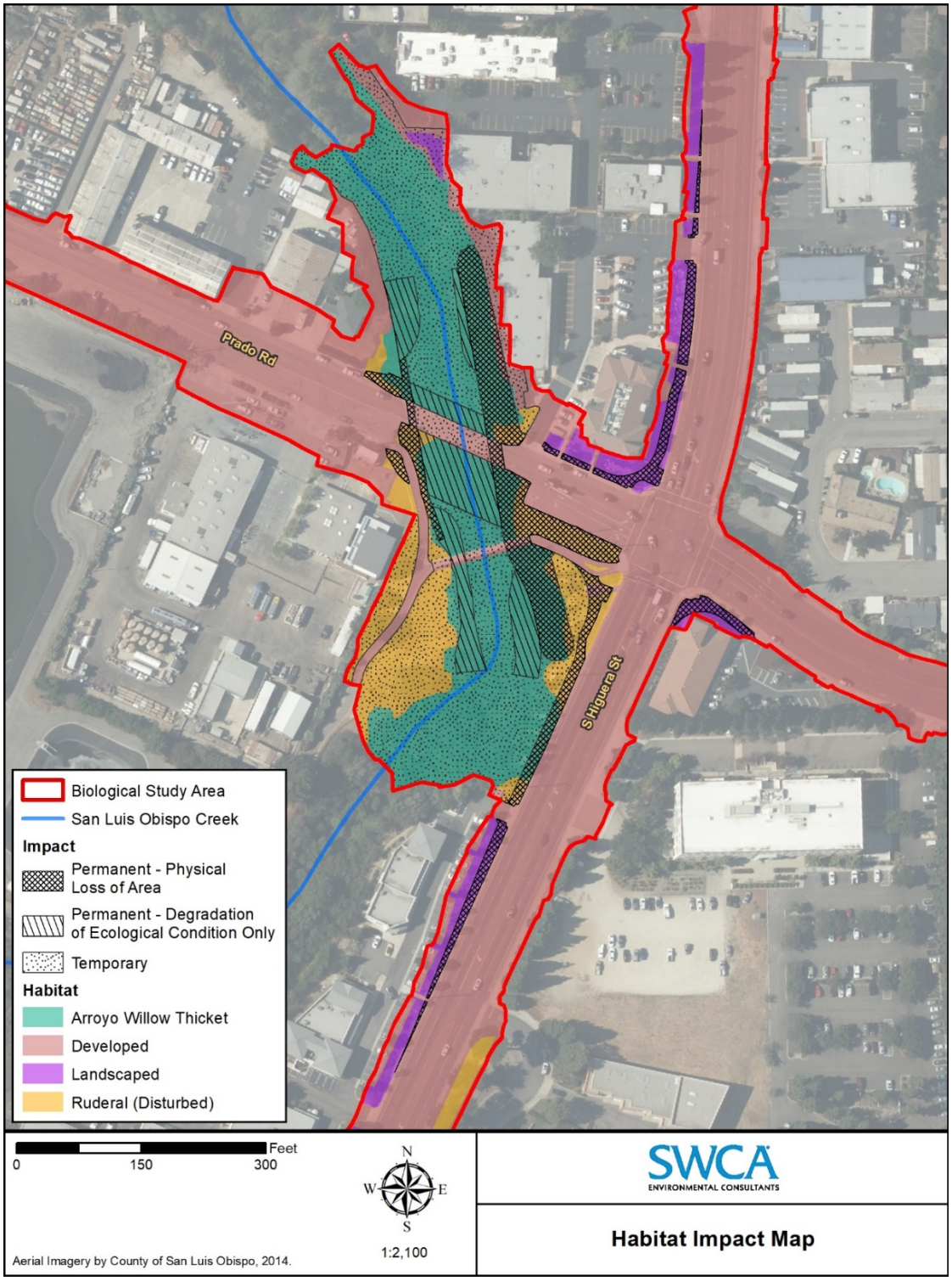
3.1.2. Physical Conditions

The BSA is located in an urban area within San Luis Obispo and is bordered to the north and south by the San Luis Obispo Creek corridor, and to the east and west by commercial and low-density development. Elevation within the BSA ranges from approximately 120 to 140 feet (37 to 43 meters) above mean sea level. In San Luis Obispo, the average annual high temperature is approximately 70 degrees Fahrenheit (ºF), and average annual low temperature is 47ºF. Average annual precipitation for the region is approximately 22 inches (Western Regional Climate Center 2018).

3.1.3. Hydrologic Resources

The San Luis Obispo Creek Watershed is an approximately 53,271-acre coastal basin in southern San Luis Obispo County. It rises to an elevation of about 2,500 feet above sea level in the Santa Lucia Range. San Luis Obispo Creek flows to the Pacific Ocean and has six major tributary basins: Stenner Creek, Prefumo Creek, Laguna Lake, East Branch San Luis Obispo Creek, Davenport Creek, and See Canyon (SLO Watershed Project 2017). The creek flows through San Luis Obispo and empties into the Pacific Ocean just west of Avila Beach.

Figure 3: Biological Study Area and Habitat Impacts Map



3.1.4. Vegetation

The descriptions of plant communities use the naming conventions of *A Manual of California Vegetation* (Sawyer et al. 2009) and include the *Preliminary Description of Terrestrial Natural Communities of California* (Holland 1986) for comparison. Vegetation communities observed within the BSA are described below and include arroyo willow thicket, ruderal, and landscaped plant communities, as well as developed and other non-vegetated areas. Habitat types within the BSA are depicted in Figure 3. A list of plants and wildlife observed within the BSA is included in Appendix C. Plant names follow *The Jepson Manual: Vascular Plants of California, 2nd edition* (Baldwin et al. 2012). Photos of the BSA are included in Appendix D.

3.1.4.1. ARROYO WILLOW THICKET

Within the BSA, San Luis Obispo Creek supports arroyo willow thicket habitat, as described by Sawyer et al. (2009), or Central Coast arroyo willow riparian forest, as described by Holland (1986), and is considered a natural community of concern by CDFW (CDFW CA Code 61.205.00). This habitat type can be found throughout most of California along stream banks, benches, slope seeps, and stringers along drainages. The dominant canopy cover throughout the site is arroyo willow (*Salix lasiolepis*), growing as shrubs and trees. It forms a dense stand with other native species such as red willow (*Salix laevigata*), western sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia*), California black walnut, mugwort (*Artemisia douglasiana*), and California blackberry (*Rubus ursinus*). Riparian scrub and forest communities provide excellent habitat for bird species because the density and complexity of the vegetation layers offer plentiful foraging and nesting opportunities. They may also provide shading for aquatic species during conditions when water is present. Arroyo willow thicket composes approximately 2.3 acres of the BSA.

3.1.4.2. RUDERAL

Ruderal habitat occurs in areas that are regularly disturbed by human activities. Since this is not a native habitat, it is not described by Holland (1986) or Sawyer et al. (2009). Non-native species such as black mustard (*Brassica nigra*), red-stemmed filaree (*Erodium cicutarium*), sweet fennel, poison hemlock (*Conium maculatum*), and non-native grasses are the dominant species. Vegetative cover is generally low due to disturbance and there is a high percentage of bare soil.

Considering the low habitat value of this vegetation and that much of it is subjected to regular disturbances, ruderal areas within the BSA have virtually no potential to support habitat for special-status species. However, these areas may be used during

dispersal and for movement during foraging in adjacent habitats. Ruderal habitat composes approximately one acre of the BSA.

3.1.4.3. LANDSCAPED

Landscaped areas include planted trees and shrubs associated with parking lots, open areas adjacent to buildings, and other areas where native or ornamental trees and shrubs have been planted along roadsides to act as noise or visual barriers. Since this is not a native habitat, it is not described by Holland (1986) or Sawyer et al. (2009). The landscaped areas mapped within the BSA includes planted native and non-native species as well as weedy species commonly found in ruderal areas. In addition to the mapped landscaped areas, there are also Individual trees and narrow rows of trees adjacent to buildings or along the roadsides within the BSA. Species include coast redwood (*Sequoia sempervirens*), blue gum (*Eucalyptus globulus*), Peruvian pepper tree (*Schimus molle*), green ash (*Fraxinus pensylvanica*), sweet gum (*Liquidambar styraciflua*), crimson bottlebrush (*Melaleuca citrinus*), Ngaio tree (*Myoporum laetum*), cotoneaster (*Cotoneaster franchetti*, *C. lucidu*s), French broom, giant yucca (*Yucca gigantea*), and many others.

Considering that much of the landscaped areas are subject to roadside disturbances, this plant community has very little potential to support habitat for special-status species; however, these areas can be used during dispersal and for movement during foraging in adjacent habitats and can provide nesting habitat for some migratory birds or roosting habitat for bats. Approximately 0.6 acre of landscaped vegetation was mapped within the project BSA.

3.1.4.4. DEVELOPED

Developed areas within the BSA primarily consist of the paved roads, road shoulders, sidewalks, parking areas, structures (including the existing bridge), and the pedestrian paths and bridge. Approximately 8.7 acres of developed surfaces are present within the BSA.

3.1.5. Other Sensitive Natural Communities/Habitats of Special Concern

Arroyo willow thicket, mapped within the BSA, may be considered a natural community of concern by CDFW (CDFW CA Code 61.201.00) (CDFW 2010a). Federally designated critical habitat for California red-legged frog is present approximately 1.5 miles north of the BSA but does not overlay the project site

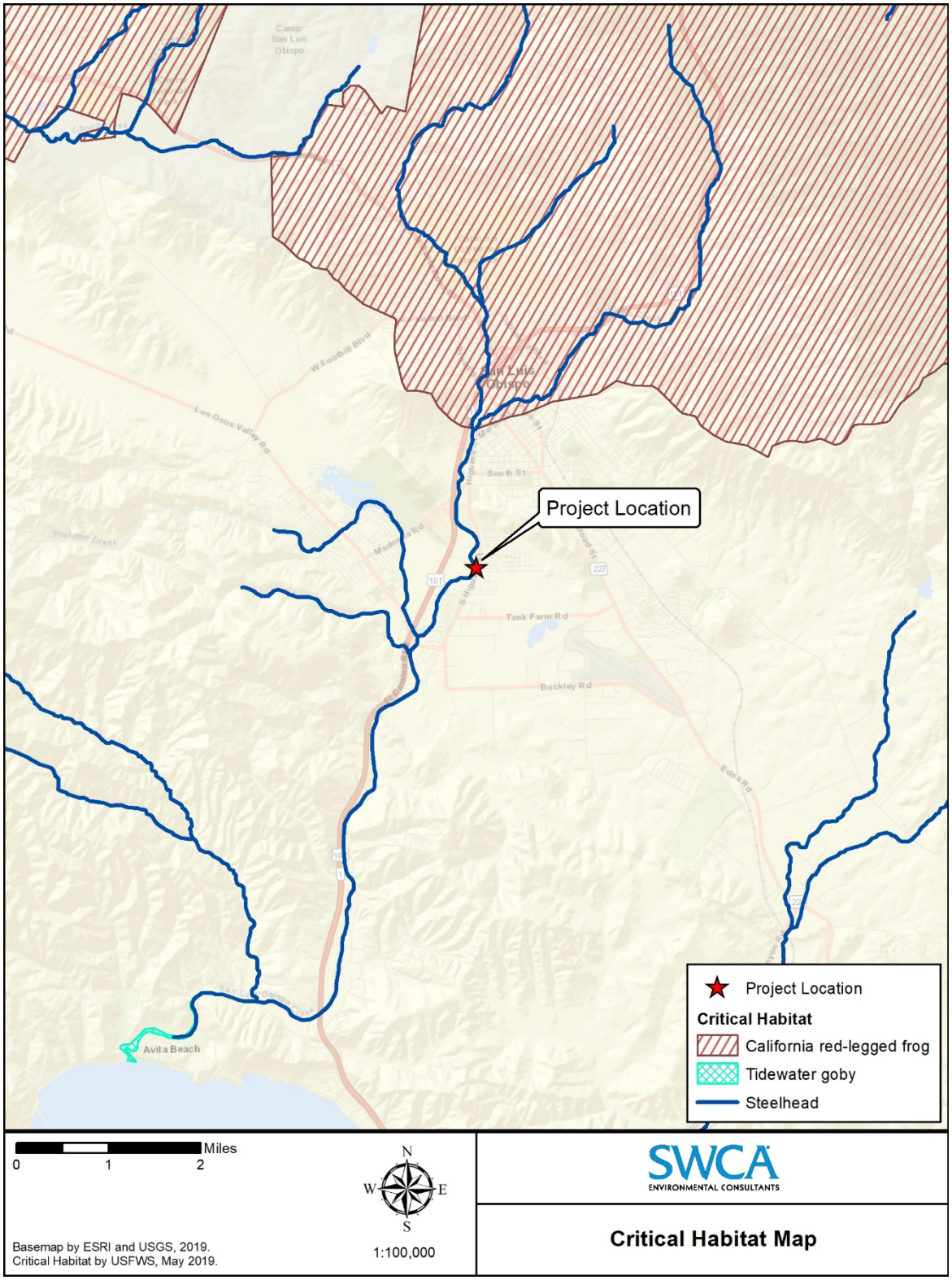
(Figure 4). The project BSA falls within federally designated critical habitat for south-central California coast steelhead Distinct Population Segment (DPS).

3.1.5.1. FEDERALLY DESIGNATED CRITICAL HABITAT FOR STEELHEAD

South-central California coast steelhead streams are streams known to support spawning populations of south-central California coast steelhead and that are within the south-central California coast steelhead DPS, from Monterey to San Luis Obispo Counties. San Luis Obispo Creek is within the south-central California coast steelhead DPS Hydrologic Sub-area 331024. In 2008, Hayes et al. issued the assessment that San Luis Obispo Creek's steelhead population was 37,000 fish in the lower reaches of the creek. San Luis Obispo Creek is likely providing a disproportionate amount of suitable steelhead rearing habitat in the county, and thus are potentially high-priority areas for protection and habitat enhancement (Stillwater Sciences 2014).

The 84-square-mile (53,271-acre) San Luis Obispo Creek watershed is surrounded by rugged, mountainous terrain that drains in a southwesterly direction. It is characterized by slightly compacted granular clay loam in the upper watershed and fine sandy loam in the lower reaches. San Luis Obispo Creek originates at an elevation of approximately 2,200 feet in the Santa Lucia mountain range near Cuesta Pass (Hallock et.al. 1994). In the 18-mile descent to the Pacific Ocean, San Luis Obispo Creek is joined by the three perennial tributaries of Reservoir, Stenner, and See Canyon Creeks; the four seasonal tributaries of Prefumo, Froom, East Fork, and Davenport Creeks; and several seasonal minor drainages. Effluent from the City's wastewater treatment facility contributes significantly to the summer flow.

Figure 4. Critical Habitat Map



Following a status review in 2005, a final listing determination was issued on January 5, 2006, for the south-central California coast steelhead DPS, and critical habitat was designated within 32 DPS watersheds (NMFS 2005). The primary constituent elements (PCEs) of this critical habitat designation include the following:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development;

2. Freshwater rearing sites with:

   (i) Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility;

   (ii) Water quality and forage supporting juvenile development; and

   (iii) Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

3. Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

4. Estuarine areas free of obstruction and excessive predation with:

   (i) Water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater;

   (ii) Natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels; and

   (iii) Juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

San Luis Obispo Creek, within the BSA, is identified as critical habitat for south-central California coast steelhead. The BSA contains PCE 3 and possibly PCE 1-2.

3.1.6. Invasive Species

A total of 35 invasive plant species, as identified by the California Invasive Plant Council (Cal-IPC) Inventory, were observed within the BSA (Table 5). The five non-native plant species with a Cal-IPC category rating of High observed in the BSA include red brome, cape ivy, fennel, French broom, and Himalayan blackberry (*Rubus*

armeniacus). Within the BSA, 19 plant species were observed with a Cal-IPC category rating of Moderate and 11 species were observed with a category rating of Limited (Cal-IPC 2018).

Table 5: Plants Observed in the Biological Study Area included in the California Invasive Plant Council's Invasive Plant Inventory

Scientific Name	Common Name	Cal-IPC Rating
Bromus madritensis ssp. *rubens*	red brome	High
Delairea odorata	cape ivy	High
Foeniculum vulgare	fennel	High
Genista monspessulana	French broom	High
Rubus armeniacus	Himalayan blackberry	High
Avena fatua	common wild oat	Moderate
Avena sativa	cultivated oat	Moderate
Brassica nigra	black mustard	Moderate
Bromus diandrus	ripgut brome	Moderate
Carduus pycnocephalus	Italian thistle	Moderate
Centaurea melitensis	tocalote	Moderate
Cirsium vulgare	bull thistle	Moderate
Conium maculatum	poison hemlock	Moderate
Cotoneaster franchetii	Francheti cotoneaster	Moderate
Festuca myuros	rattail fescue	Moderate
Festuca perennis	Italian ryegrass	Moderate
Hirschfeldia incana	summer mustard	Moderate
Hordeum marinum ssp. *gussoneanum*	seaside barley	Moderate
Hordeum murinum ssp. *leporinum*	hare barley	Moderate
Hypochaeris radicata	hairy cat's ear	Moderate
Myoporum laetum	Ngaio tree	Moderate
Oxalis pes-caprae	Bermuda buttercup	Moderate
Trifolium hirtum	rose clover	Moderate
Vinca magor	bigleaf periwinkle	Moderate
Erodium cicutarium	redstem filaree	Limited
Helminthotheca echioides	bristly oxtongue	Limited
Medicago polymorpha	burclover	Limited
Pennisetum clandestinum	kikuyu grass	Limited
Plantago lanceolata	English plantain	Limited
Raphanus sativus	wild radish	Limited
Ricinus communis	castor bean	Limited
Rumex crispus	curly-leaved dock	Limited
Schinus molle	Peruvian pepper tree	Limited
Silybum marianum	milk thistle	Limited
Stipa miliacea var. *miliacea*	smilo grass	Limited

3.1.7. Migration, Travel Corridors, and Habitat Connectivity

The California Essential Habitat Connectivity Project was queried for Essential Habitat Connectivity, which are the best available data describing important areas for maintaining connectivity between large blocks of land for wildlife corridor purposes (CDFW 2010b). These important areas are referred to as Essential Connectivity Areas (ECA). ECAs are only intended to be a broad-scale representation of areas that provide essential connectivity.

The BSA does not fall within an ECA. It is expected that additional linkages will be identified as new data becomes available for various species. For the purposes of this analysis, it is reasonable to assume that the riparian corridor within the project site may be used by wildlife as movement corridors on a smaller scale. The San Luis Obispo Creek riparian corridor provides habitat for many aquatic and terrestrial species including steelhead, California red-legged frog, southwestern pond turtle, and migratory birds.

The existing bridge and in-channel piles are currently unlikely to affect fish passage in their current state and the proposed project would not change these existing fish passage characteristics, as the existing piles in the creek channel would be removed.

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

In this BA, the term "effect" reflects a quantifiable or qualifiable change or response to an activity. The term "impact" implies a magnitude relative to "effect." Potential impacts within the project BSA/action area, both permanent and temporary, have been quantified based on project components such as temporary diversion/dewatering, the bridge improvements, new abutments, RSP, utilities relocation, and heavy equipment operation/worker foot traffic along the streambed, streambanks, and adjacent uplands.

Impacts anticipated from the project were quantified using geographic information system (GIS) technology. Estimated impacts to vegetation communities characterized and described in the Physical Conditions discussion of Chapter 3 are quantified below in Table 6 and depicted previously in Figure 3. Impacts to steelhead critical habitat were quantified up to the Ordinary High Water Mark (OHWM) of San Luis Obispo Creek. The project may also require the removal or trimming of a few native trees, but the precise number is unknown at this time.

Temporary Environmentally Sensitive Area (ESA) fencing would be installed along the maximum disturbance limits to minimize disturbance to habitats/vegetation. Provisions for the installation of ESA fencing will be included in the construction contract and 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.

Table 6: Estimated Impacts to Habitat and Sensitive Natural Communities

Habitat	Estimated Impacts (Acres)	
	Permanent	Temporary
Arroyo Willow Thicket	0.73	0.95
Ruderal	0.22	0.49
Landscaped	0.19	0.02
Developed	0.07	0.25
Streambed[1] (includes Steelhead Critical Habitat)	0.08[1]	0.51[1]
Totals	**1.29**	**2.22**

[1] The stream channel, which includes federal and state jurisdictional areas as well as federally designated Critical Habitat for South Central Coast Steelhead DPS, is underneath the Arroyo Willow Habitat and has been subtracted from the impact acreage for Arroyo Willow Thicket to account for overlap and to avoid duplication of impact acreage.

4.1. Federally Listed or Proposed Plant Species Occurrences

4.1.1. Discussion of Federally Listed or Proposed Plant Species

4.1.1.1. SURVEY RESULTS

Botanical surveys were conducted within the BSA during the appropriate flowering periods in May 2015, April 2019, and June 2019. No federally listed species or species propose for listing were observed during the floristic surveys within the BSA.

4.1.1.2. CRITICAL HABITAT

No designated critical habitat for federally listed plant species or species proposed for listing occurs in the BSA.

4.1.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for federally listed plant species or species proposed for listing are required.

4.1.1.4. PROJECT EFFECTS

The FESA Section 7 effects determinations are that the proposed project will have no effect on Morro manzanita (*Arctostaphylos morroensis*), marsh sandwort (*Arenaria paludicola*), California jewelflower (*Caulanthus californicus*), Chorro Creek bog thistle/San Luis Obispo fountain thistle (*Cirsium fontinale* var. *obispoense*), Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*), and spreading navarretia (*Navarretia fossalis*). The basis for these determinations is that there is no suitable habitat for any of the federally listed plant species considered in Table 2, none were observed during appropriately timed floristic surveys, and none are expected to occur in the BSA. The proposed project will have no effect on federally designated critical habitat for these species, because the BSA does not occur within critical habitat units for these species.

4.1.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

No modifications to the project to mitigate effects to federally listed plant species or species proposed for listing are required.

4.1.1.6. CUMULATIVE EFFECTS (FESA)

No cumulative effects to federally listed plant species or species proposed for listing are anticipated.

4.2. Federally Listed or Proposed Animal Species Occurrences

The FESA Section 7 effects determinations are that the proposed action will have no effect on vernal pool fairy shrimp (*Branchinecta lynchi*), Kern primrose sphinx moth (*Euproserpinus euterpe*), California tiger salamander (*Ambystoma californiense*), blunt-nosed leopard lizard (*Gambelia silus*), California condor (*Gymnogyps californianus*) California clapper rail (*Rallus longirostris obsoletus*), giant kangaroo rat (*Dipodomys ingens*), or San Joaquin kit fox (*Vulpes macrotis mutica*). The basis for these determinations is that the BSA does not support suitable habitat for these species and none of these species were observed during surveys or otherwise expected to occur within the BSA. The proposed action will have no effect on federally designated critical habitat for these species, because the BSA does not occur within critical habitat units for these species.

The south-central California coast steelhead DPS (*Oncorhynchus mykiss*), California red-legged frog (*Rana draytonii*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), and least Bell's vireo (*Vireo bellii pusillus*), are discussed in the following sections.

4.2.1. Discussion of South-central California Coast Steelhead (*Oncorhynchus mykiss*)

Steelhead occupy streams in watersheds with perennial fresh water. The populations of steelhead on the California central coast are part of the south-central California coast DPS. The south-central California coast DPS of steelhead is federally listed as threatened.

Steelhead are genetically indistinct from rainbow trout and differ only in their behavior. They prefer cool, clear, coastal streams and rivers with a gradient less than five percent. Steelhead exhibit life cycle strategies similar to other salmonids, known as anadromy. Steelhead trout enter streams and rivers to prepare for migration to spawning grounds as soon as streamflow is adequate and the summer sand bar present at the mouths of many coastal lagoons have breached.

Optimal habitat for steelhead on the Pacific Coast can be characterized by clear, cool water with abundant instream cover (e.g., 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 are occasionally found in reaches of streams containing habitat that would be considered less than optimal. Steelhead within the

central coast region start to migrate up coastal drainages following the first substantial seasonal rainfall. Spawning typically occurs during the spring in riffle areas that consist of clean, coarse gravels. Juveniles (smolts), after rearing for 1 to 3 years within freshwater, and post-spawning adults, out-migrate to the ocean from March to July, depending on streamflows.

Steelhead are well documented within San Luis Obispo Creek.

4.2.1.1. SURVEY RESULTS

Focused surveys for south-central California coast steelhead were not conducted. However, the BSA is within the San Luis Obispo Creek watershed and supports a known steelhead population. Therefore, presence of south-central California coast steelhead is inferred.

4.2.1.2. CRITICAL HABITAT

As stated previously, San Luis Obispo Creek is within the south-central California coast steelhead DPS Hydrologic Sub-area 331024. Approximately 26,136 square feet (0.6 acre) of south-central California coast steelhead DPS critical habitat is present within the BSA along San Luis Obispo Creek up to the OHWM.

According to the south-central California coast steelhead recovery plan (NMFS 2013), “Very High” threats to the San Luis Obispo Creek steelhead trout population include roads, culverts and crossings, groundwater extraction, urban development, flood control, and agricultural development; “High” threats include levees and channelization, recreational facilities, and non-point pollution; “Medium” threats include wildfires and dams and surface water diversions; and “Low” threats include mining and quarrying.

As stated previously, San Luis Obispo Creek is within the south-central California coast steelhead DPS Hydrologic Sub-area 331024. Approximately 26,136 square feet (0.6 acre) of south-central California coast steelhead DPS critical habitat is present within the BSA along San Luis Obispo Creek up to the OHWM. The BSA contains PCE 3 (3 freshwater migration corridors) and possibly PCE 1 (freshwater spawning sites) and 2 (freshwater rearing sites).

4.2.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures are recommended to address effects to south-central California coast steelhead and its critical habitat:

1. Prior to initiation of stream diversion/dewatering, a qualified biologist shall conduct a worker environmental training program, including a description of steelhead, steelhead critical habitat, its legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating FESA and permit conditions.

2. In-stream work will take place between June 15 and October 31 in any given year, when the surface water within San Luis Obispo Creek is likely to be at seasonal minimum. Deviations from this work window will only be made with permission from the relevant regulatory agencies. During in-stream work, a qualified biologist that has experience in steelhead biology and ecology, aquatic habitats, biological monitoring (including diversion/dewatering), and capturing, handling, and relocating fish species will be retained. During in-stream work, the biological monitor(s) will continuously monitor placement and removal of any required stream diversions/dewatering and only the approved biologist will capture stranded steelhead and other native fish species and relocate them to suitable habitat, as appropriate. The approved biologist(s) will capture steelhead stranded as a result of diversion/dewatering and relocate steelhead to the nearest suitable in-stream habitat. The approved biologist(s) will note the number of steelhead observed in the affected area, the number of steelhead relocated, and the date and time of the collection and relocation.

3. During in-stream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes will be completely screened with no larger than 3/32-inch (2.38 mm) wire mesh to prevent steelhead and other sensitive aquatic species from entering the pump system. Pumps will release the diverted water so that suspended sediment will not re-enter the stream. The form and function of pumps used during the dewatering activities will be checked daily, at a minimum, by a qualified biological monitor to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.

4. Prior to initiation of any construction activities, including vegetation clearing or grubbing, sturdy high-visibility fencing will be installed to protect the jurisdictional areas adjacent to the designated work areas. This fencing will be placed so that unnecessary adverse impacts to the adjacent habitats are avoided. No construction work (including storage of materials) will occur outside of the specified project limits. The fencing will remain in place during the entire

construction period, be monitored periodically by a qualified biologist, and maintained as needed by the contractor.

5. Prior to construction, a Storm Water Pollution Prevention Plan or Water Pollution Control Plan for the project will be prepared. Provisions of this plan shall be implemented during and after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.

6. Prior to construction, the contractor will prepare a Hazardous Materials Response Plan to allow for a prompt and effective response to any accidental spills. Workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

7. During construction, erosion control measures (e.g., silt fencing, fiber rolls, and barriers) will remain available on-site and will be utilized as necessary to prevent erosion and sedimentation in jurisdictional areas. No synthetic plastic mesh products will be used for erosion control and use of these materials on-site is prohibited. Erosion control measures will be checked to ensure that they are intact and functioning effectively and maintained on a daily basis throughout the duration of construction. The contractor will also apply adequate dust control techniques, such as site watering, during construction to protect water quality.

8. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area and at least 100 feet (30 meters) from wetlands or other aquatic areas. At a minimum, equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills.

9. During construction, trash will be contained, removed from the work site, and disposed of regularly. Following construction, trash and construction debris will be removed from the work areas. Vegetation removed from the construction site will be taken to a permitted landfill to prevent the spread of invasive species. If soil from weedy areas (such as areas with poison hemlock or other invasive exotic plant species) must be removed to an off-site location, the top 6 inches (152 millimeters [mm]) containing the seed layer in areas with weedy species will be disposed of at a permitted landfill.

10. During construction, no pets will be allowed on the construction site.

11. Prior to construction, the City of San Luis Obispo will prepare a comprehensive Mitigation and Monitoring Plan. Replacement plantings will be detailed in landscape architecture plans and the final Mitigation and Monitoring Plan. The final Mitigation and Monitoring Plan will detail mitigation commitments and will be consistent with standards and mitigation requirements from the applicable regulatory agencies. The Mitigation and Monitoring Plan will be prepared when full construction plans are prepared and will be finalized through the permit review process with regulatory agencies. It is anticipated that restoration plantings will be onsite and in-kind and consist mainly of native riparian species such as red willow, arroyo willow, western sycamore, box elder, California blackberry, and mugwort.

4.2.1.4. PROJECT EFFECTS

If present within the BSA during project activities, individual steelhead may be directly impacted by the stream diversion activities as well as movement and use of construction equipment within the creek channel. They may be stranded in portions of the creek that must be dewatered, get caught in dewatering pumps, or made vulnerable to predation from foraging birds and mammals. With the implementation of avoidance and minimization measures, these potential impacts may be avoided.

Potential indirect impacts to steelhead from the project may occur and include sediment deposition downstream of the work area, which may adversely impact downstream water quality. However, these potential indirect impacts to steelhead may be avoided through the use of appropriate silt and erosion control measures.

The FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, south-central California steelhead. The basis for this determination is that steelhead are known to occupy San Luis Obispo Creek and there would be potential for take of the species during construction.

Implementation of the project would result in temporary impacts to the open water habitat in San Luis Obispo Creek as a result of construction activities, including water diversion within the project work area and equipment use within the river channel. Loss of service in steelhead critical habitat, while dewatering, would be an adverse effect to the primary functions of that steelhead critical habitat, but only temporary in duration. The installation of concrete bridge abutments may permanently impact approximately 3,845 square feet (ft^2) (0.08 acre) of steelhead critical habitat but would not affect stream flows. Approximately 22,216 ft^2 (0.51 acre) of temporary impacts would occur within the stream channel from dewatering and diversion during project

construction. These impacts equate to less than 1% of the steelhead critical habitat designated for San Luis Obispo Creek (included in Estero Bay Hydrologic Unit 3310). Pile installation for the abutments and retaining wall would be accomplished with drilling and would not require pile driving.

Based on the potential for temporary and permanent impacts, the FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, south-central California coast steelhead critical habitat.

4.2.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Several requirements in the avoidance and mitigation measures for this project have been designed to mitigate the effects of this project. This includes, but is not limited to, diverting/dewatering the creek during the low-flow season, having a biological monitor present during in-stream work, and screens for the pumping mechanism to protect steelhead, other aquatic organisms, and water quality. The removal of invasive weed species and replanting of native species are expected to have a beneficial effect on the creek habitat within the project limits.

4.2.1.6. CUMULATIVE EFFECTS (FESA)

Wetland and riparian resources have been heavily impacted over the history of settlement in the western United States, mainly due to agriculture and other alternative land uses. Steelhead populations have diminished over time from human related impacts (such as overfishing and water diversion). The future is likely to bring an increasing population that demands more water and may bring changes to the climate that affect the weather.

The cumulative effect area considered is the San Luis Obispo Creek watershed. Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this assessment. Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions that are anticipated to occur within the action area. The project is not expected to result in, or contribute to, cumulative impacts to steelhead or its critical habitat, as impacts will be mitigated through avoidance and minimization measures, implementation of the Mitigation and Monitoring Plan, use of BMPs, and other measures.

4.2.2. Discussion of California Red-legged Frog (*Rana draytonii*)

California red-legged frog is federally threatened. This amphibian species ranges from Northern California to Baja California, Mexico, and is found from sea level to approximately 5,200 feet (USFWS 2010). It is a large (two to five inches), brown, grayish, red frog with black flecks, a red lower abdomen, and red on the underside of the hind legs. A characteristic feature of the California red-legged frog is its prominent dorsolateral folds, visible on both sides of the frog (Stebbins 2003). Presently, Monterey, San Luis Obispo, and Santa Barbara Counties support the largest remaining California red-legged populations within California.

California red-legged frogs use a variety of areas, including aquatic, riparian, and upland habitats. They prefer aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 2.3 feet, and the presence of fairly sturdy underwater supports such as cattails (*Typha* spp.). The largest densities of this species are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation (Jennings and Hayes 1994). The California red-legged frog typically breeds from January to July, with peak breeding occurring in February and March. Softball-sized egg masses are attached to subsurface vegetation, and hatched tadpoles require 11 to 20 weeks to metamorphose. Metamorphosis typically occurs from July to September.

The California red-legged frog uses both riparian and upland habitats for foraging, shelter, cover, and nondispersal movement. Upland refugia may be natural, such as the spaces under boulders or rocks and organic debris (e.g., downed trees or logs), or manmade, such as certain industrial debris and agricultural features (e.g., drains, watering troughs, abandoned sheds, or stacks of hay or other vegetation); the California red-legged frog will also use small mammal burrows and moist leaf litter as refugia (USFWS 2010). Adults are predominantly nocturnal, while juveniles can be active at any time of day. Riparian habitat degradation, urbanization, predation by bullfrogs, and historic market harvesting, have all reportedly contributed to the decline of the species.

4.2.2.1. Survey Results

According to a query of the CNDDB, there is a record of California red-legged frog within one mile (0.93 mile) southwest of the BSA, adjacent to San Luis Obispo Creek. This record (CNDDB Occ. No. 895) is from August 9, 2006, was a natural/native occurrence, and is presumed extant.

Protocol-level surveys were not conducted for this project. Due to the proximity of an existing CNDDB occurrence and designated critical habitat, presence of California red-legged frog within the BSA is inferred due to the mobility of this species. It may use the stretch of San Luis Obispo Creek within the BSA as a migration corridor.

4.2.2.2. CRITICAL HABITAT

The project site is not within a California red-legged frog designated critical habitat unit. San Luis Obispo critical habitat unit SLO-4 for California red-legged frog is located approximately 1.6 miles north of the BSA, encompasses 116,517 acres in central San Luis Obispo County, and includes the following watersheds: Old Creek, Whale Rock Reservoir, the southern portion of Hale Creek, Morro Bay, San Luisito Creek, the western and southern portions of Santa Margarita Creek, Choro Reservoir, Stenner Lake, Reservoir Canyon, Trout Creek, and Big Falls Canyon (USFWS 2010).

4.2.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

Caltrans anticipates the proposed project will qualify for FESA incidental take coverage under the "*Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program"* (USFWS 2011), which includes the following applicable measures:

1. Only USFWS-approved biologists will participate in activities associated with the capture and handling of California red-legged frogs.

2. Ground disturbance will not begin until written approval is received from the USFWS that the biologist(s) is qualified to do conduct the work, unless the individual has/have been approved previously and the USFWS has not revoked that approval. Caltrans will request approval of the biologist(s) from the USFWS.

3. A USFWS-approved biologist will survey the project area no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The USFWS-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The relocation site should be in the same drainage to the extent practicable. Caltrans will coordinate with USFWS on the relocation site prior to the capture of any California red-legged frogs.

4. Before any activities begin on a project, a USFWS -approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

5. A USFWS -approved biologist will be present at the work site until California red-legged frogs have been relocated out of harm's way, workers have been instructed, and disturbance of the habitat has been completed. After this time, the City of San Luis Obispo will designate a person to monitor on-site compliance with minimization measures. The USFWS -approved biologist will ensure that this monitor receives the training outlined in BIO-21 above and in the identification of California red-legged frogs. If the monitor or the USFWS-approved biologist recommends that work be stopped because California red-legged frogs would be affected in a manner not anticipated by Caltrans, the City of San Luis Obispo, and USFWS during the review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the adverse effect immediately or require that actions that are causing these effects be halted. If work is stopped, Caltrans, the City of San Luis Obispo and USFWS will be notified as soon as is reasonably possible.

6. During project activities, trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, trash and construction debris will be removed from work areas.

7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water). The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans and the City of San Luis Obispo will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

8. Habitat contours will be returned to their original configuration at the end of project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless the USFWS, Caltrans, and the City of San Luis Obispo determine that it is not feasible or modification or original contours would benefit the California red-legged frog.

9. The number of access routes, size of staging areas, and the total area of activity will be limited to the minimum necessary to achieve the project. Environmentally Sensitive Areas (ESAs) will be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

10. The City of San Luis Obispo and the Caltrans will attempt to schedule work for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum extent practicable, during the breeding season (November through May). Isolated pools that are important to maintain California red-legged frogs through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and technical assistance between the Caltrans and USFWS during project planning will be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.

11. To control sedimentation during and after project implementation, Caltrans and the City of San Luis Obispo will implement BMPs outlined in any authorizations or permits issued under the authorities of the Clean Water Act that it receives for the specific project. If BMPs are ineffective, Caltrans will attempt to remedy the situation immediately, in coordination with the USFWS.

12. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the stream bed will be minimized to

the maximum extent possible; any imported material will be removed from the stream bed upon completion of the project.

13. Unless approved by the USFWS, water will not be impounded in a manner that may attract California red-legged frogs.

14. A USFWS -approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Lithobates catesbeiana*), crayfish, and centrarchid fishes from the project area, to the maximum extent. The USFWS -approved biologist will be responsible for ensuring their activities are in compliance with the California Fish and Game Code.

15. If Caltrans and the City of San Luis Obispo demonstrate that disturbed areas have been restored to conditions that allow them to function as habitat for the California red-legged frog, these areas will not be included in the amount of total habitat permanently disturbed.

16. To ensure that diseases are not conveyed between work sites by the USFWS -approved biologist, the fieldwork code of practice developed by the Declining Amphibian Task Force will be followed at all times.

17. Project sites will be re-vegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities with the project, unless the USFWS, Caltrans, and the City of San Luis Obispo have determined that it is not feasible or practical.

18. The City of San Luis Obispo and Caltrans will not use herbicides as the primary method to control invasive, exotic plants. However, if the City of San Luis Obispo and Caltrans determine the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, the following additional measures will be implemented to protect California red-legged frog.

    a. The City of San Luis Obispo and Caltrans will not use herbicides during the breeding season for California red-legged frog;

    b. The City of San Luis Obispo and Caltrans will conduct surveys for California red-legged frog immediately prior to the start of herbicide use. If found, California red-legged frog will be relocated by a qualified biologist

to suitable habitat far enough from the project area that no direct contact with herbicide would occur;

c. Cape ivy and other invasive plants will be cut and hauled out by hand and painted with glyphosate-based products, such as Aquamaster® or Rodeo®;

d. Licensed and experienced Caltrans staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site.

e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.

f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water).

g. Foliar applications of herbicide will not occur when wind speeds are in excess of three miles per hour.

h. No herbicides will be applied within 24 hours of forecasted rain.

i. Application of herbicides will be done by qualified Caltrans staff, City of San Luis Obispo staff, or contractors to ensure that overspray is minimized, that application is made in accordance with the label recommendations, and that required and reasonable safety measures are implemented. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the United States Environmental Protection Agency's (EPA's) Office of Pesticide Programs Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Caltrans and the City of San Luis Obispo will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

1. Upon completion of the project, Caltrans and the City of San Luis Obispo will ensure that a Project Completion Report is completed and provided to the USFWS Ventura Field Office. Caltrans and the City of San Luis Obispo should include recommended modifications of the protective measures if

alternative measures would facilitate compliance with the provisions of the consultation. In addition, Caltrans will reinitiate formal consultation in the event any of the following thresholds are reached as a result of the projects conducted under the provisions of the consultation associated with the Programmatic Biological Opinion:

Caltrans will reinitiate consultation when, as a result of projects conducted under the provision of the consultation associated with the Programmatic Biological Opinion, any of the following occur:

a. 10 California red-legged frog adults or juveniles have been killed or injured in any given year. (For this and all other standards, an egg mass is considered to be on California red-legged frog.);
b. 50 California red-legged frogs have been killed or injured in total;
c. 20 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in any given year;
d. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in total;
e. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in any given year; or
f. 500 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in total.

4.2.2.4. PROJECT EFFECTS

Project construction could result in the injury or mortality of California red-legged frogs (if present) during diversion/dewatering of San Luis Obispo Creek. The potential need to capture and relocate California red-legged frogs 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 effects of construction activities, including noise and vibration, may cause California red-legged frogs to abandon habitat adjacent to work areas. This disturbance may increase the potential for predation and desiccation if California red-legged frogs abandon shelter sites. The indirect effects of erosion and sedimentation could also impact California red-legged frogs. However, potential indirect effects will be mitigated through the use of appropriate silt/erosion controls. The proposed project will also create temporary and/or permanent impacts to vegetation along the creek, which may alter shading and microhabitat temperature regulation in the channel and indirectly affect California red-legged frog habitat. The removal of any encountered invasive wildlife species from San Luis Obispo Creek may produce a beneficial effect by reducing predation and competition pressures for California red-legged frog.

Although no California red-legged frogs were observed during reconnaissance surveys within the BSA, there is a potential for the species to occur within the area. An unknown number of California red-legged frogs could be subjected to take, but the potential for these impacts is anticipated to be low. However, it is acknowledged that this could change through time, where habitat conditions and/or California red-legged frog numbers could fluctuate.

The FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, California red-legged frog. The basis for this determination is that California red-legged frog presence has been inferred and there would be potential for take of the species during construction. The avoidance and minimization measures below are the relevant Programmatic Biological Opinion measures to qualify a project for programmatic concurrence for the purposes of USFWS formal consultation (USFWS 2011).

Because the project does not occur within a critical habitat unit for California red-legged frog, the FESA Section 7 effects determination is that the proposed project will have no effect on California red-legged frog critical habitat.

4.2.2.5. Modifications to the Project to Mitigate Effects

No other modifications to the project are proposed.

4.2.2.6. Cumulative Effects (FESA)

The cumulative effect area considered is the San Luis Obispo Creek watershed. Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this assessment.

Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions that are anticipated to occur within the action area. The project is not expected to result in, or contribute to, cumulative impacts to California red-legged frog, as impacts will be mitigated through avoidance and minimization measures, implementation of the Mitigation and Monitoring Plan, use of BMPs, and other measures.

4.2.3. Discussion of Least Bell's Vireo (*Vireo bellii pusillus*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*), and Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)

These bird species are addressed here as a group because they have similar habitat requirements, project-related impacts, and avoidance and minimization measures.

Least Bell's vireo is a federal and state endangered species. It is one of four recognized subspecies of Bell's vireo and is the western-most subspecies, breeding entirely within California and northern Baja California. Critical habitat for least Bell's vireo was designated in February 1994. The current designation identifies critical habitat in Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties (USFWS 1994). The BSA is not within the boundaries of the designated critical habitat. Historically, least Bell's vireo was a common to locally abundant species in lowland riparian habitat, ranging from coastal southern California through the Sacramento and San Joaquin Valleys. By the time the species was federally listed in 1986, least Bell's vireo had been extirpated from most of its historic range. Populations were confined to eight counties south of Santa Barbara, with the majority of birds occurring in San Diego County. The population decline was the likely result of nest parasitism by brown-headed cowbirds (*Molothrus ater*) and habitat conversion to agriculture (USFWS 1998).

Least Bell's vireo is the grayest of the four subspecies and is about four inches long with a seven-inch wingspan. Their primary diet is insects. Least Bell's vireo requires riparian areas to breed and typically inhabit structurally diverse woodlands along watercourses. They occur in a number of riparian habitat types, including cottonwood-willow woodlands/forests, oak woodlands, and mule fat scrub. Several investigators have attempted to identify the habitat requirements of the least Bell's vireo by comparing characteristics of occupied and unoccupied sites and have focused on two features that appear to be essential: 1) the presence of dense cover within three to six

feet off the ground, where nests are typically placed; and 2) a dense, stratified canopy, which is needed for foraging (USFWS 1998).

Least Bell's vireos usually arrive in California during mid- to late-March. They build their nests in a variety of plants that provide concealment in the form of dense foliage. The nests are open-cup nests placed in the horizontal fork of a tree or shrub branch. Females typically lay clutches of two to four eggs, and incubation takes 14 days. Nestlings fledge 10 to 12 days after hatching.

Southwestern willow flycatcher is a federal and state endangered species. Federally designated critical habitat for this species does not occur within San Luis Obispo County. It is a summer breeder within its range in the United States and migrates to wintering areas in Central America by the end of September. Nest territories are set up for breeding; there is some site fidelity to nest territories. Southwestern willow flycatchers breed in areas from near sea level to 8,500 feet (2,600 meters). It establishes nesting territories, builds nests, and forages where mosaics of relatively dense and expansive growths of trees and shrubs are established, generally near or adjacent to surface water or underlain by saturated soil. Habitat characteristics such as dominant plant species, size and shape of habitat patch, tree canopy structure, vegetation height, and vegetation density vary widely among breeding sites. Nests are typically placed in trees where the plant growth is most dense, where trees and shrubs have vegetation near ground level, and where there is a low-density canopy (USFWS 2014a). Habitat not suitable for nesting may be used for migration and foraging.

Western yellow-billed cuckoo is a federally threatened and State endangered species. The USFWS designated critical habitat for this species on December 2, 2014. The BSA is not located within any of the proposed critical habitat units (USFWS 2014b). Although western yellow-billed cuckoo is not included on the official list received from USFWS, this species did appear on the CNDDB query and therefore has been included in this discussion.

Yellow-billed cuckoos are slender, long-tailed birds that manage to stay well hidden in deciduous woodlands. They usually sit stock still, even hunching their shoulders to conceal their crisp white underparts, as they hunt for large caterpillars. Bold white spots on the tail's underside are often the most visible feature on a shaded perch. Yellow-billed cuckoos are fairly common in the East but have become rare in the West in the last half-century. Yellow-billed cuckoos occupy wooded habitat with dense cover in the vicinity of water, including woodlands with low, scrubby,

vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. They typically utilize riparian woodlands of willows, cottonwoods and dense stands of mesquite to breed. Prey primarily consists of caterpillars and other small insects, fruit, and seeds (Hughes 1999).

4.2.3.1. SURVEY RESULTS

While they were not observed within the BSA during surveys, riparian habitat within the BSA may provide suitable foraging habitat for least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, and other bird species. The width of the corridor and proximity to urban activities may decrease the overall value of the site to provide nesting habitat. According to the CNDDB query:

1. The nearest recorded occurrence of least Bell's vireo is from May 14, 1947 and presumed extant, located approximately 25 miles north of the BSA in the city of Paso Robles (CNDDB Occ. No. 127). Nesting pairs of this species are considered unlikely to occur in the project area but cannot be ruled out due to the presence of suitable riparian habitat.

2. There are currently no known occurrences of southwestern willow flycatcher in San Luis Obispo County. The nearest occurrence is from within the Santa Ynez River in Santa Barbara County. Nesting pairs of this species are considered unlikely but cannot be ruled out due to the presence of suitable riparian habitat.

3. The nearest recorded occurrence of western yellow-billed cuckoo, from July 5, 1932, located approximately 4.2 miles southwest of the BSA (CNDDB Occ. 83), is considered extirpated. Nesting pairs of this species are considered unlikely but cannot be ruled out due to the presence of suitable riparian habitat.

While least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo appeared on the official USFWS species list obtained for the proposed project, no protocol surveys (where applicable) were conducted for these species because they are anticipated to have a very low potential for occurrence in or near the BSA. There are no known records for these species along San Luis Obispo Creek, nor are there any nearby occurrences.

4.2.3.2. CRITICAL HABITAT

The BSA does not occur within federally designated critical habitat or proposed critical habitat for least Bell's vireo, southwestern willow flycatcher, or western yellow-billed cuckoo.

4.2.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures are recommended to address effects to least Bell's vireo, southwestern willow flycatcher, and/or western yellow-billed cuckoo:

1. If feasible and regulatory approvals allow, tree removal shall be scheduled to occur from October 1 to January 31, outside of the typical nesting bird season, to avoid potential impacts to nesting birds. If tree removal or other construction activities are proposed to occur within 100 ft of potential habitat during the nesting season (February 1 to September 120, a nesting bird survey shall be conducted by a biologist determined qualified by Caltrans no more than three (3) days prior to construction. If an active nest is found, a qualified biologist shall determine an appropriate buffer and monitoring strategy based on the habits and needs of the species. The buffer area shall be avoided until a qualified biologist has determined that juveniles have fledged.

2. If least Bell's vireo, southwestern willow flycatcher, and/or western yellow-billed cuckoo are observed within 100 ft of construction activities, a qualified biologist shall implement an exclusion zone and work shall be avoided within the exclusion zone until the least Bell's vireo, southwestern willow flycatcher, and/or western yellow-billed cuckoo are located greater than 100 ft from project-related disturbance. If an active least Bell's vireo, southwestern willow flycatcher, and/or western yellow-billed cuckoo nest is observed within 100 ft of the BSA, all project activities shall immediately cease and Caltrans shall contact USFWS and other relevant agencies within 48 hours. If required, Caltrans shall then initiate FESA Section 7 formal consultation with USFWS for least Bell's vireo, southwestern willow flycatcher, and/or western yellow-billed cuckoo and implement additional measures as necessary.

4.2.3.4. PROJECT EFFECTS

The removal of vegetation could directly impact active bird nests and any eggs or young residing in nests. Indirect impacts could also result from noise, dust, and other disturbance associated with construction, which could alter perching, foraging, and/or nesting behaviors. Increased, prolonged, ambient construction-related noise and vibration could adversely affect breeding and nesting behavior and contribute to a decrease in nesting success.

While temporary loss of vegetation supporting potential nesting habitat would occur, this would be mitigated 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 nesting bird species.

Because of their extremely low likelihood of occurrence and that avoidance and minimization measures will be employed to protect nesting bird species, the FESA Section 7 effects determination is that the proposed project may affect, but is not likely to adversely affect, least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo.

The FESA Section 7 effects determination is that the proposed project will have no effect on least Bell's vireo, southwestern willow flycatcher, or western yellow-billed cuckoo critical habitat.

4.2.3.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

No other modifications to the project are proposed.

4.2.3.6. CUMULATIVE EFFECTS (FESA)

The cumulative effect area considered is the San Luis Obispo Creek watershed. Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this assessment. Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions that are anticipated to occur within the action area. The project is not expected to result in, or contribute to, cumulative impacts to least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo, as impacts will be mitigated through avoidance and minimization measures, implementation of the Mitigation and Monitoring Plan, use of BMPs, and other measures.

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Chapter 5. Conclusions and Determinations

5.1. Conclusions

Based on the studies and analyses provided in this BA, implementation of the Prado Road Bridge Widening Project has the potential to affect federally listed species and designated critical habitat. Implementation of the avoidance and minimization measures described in Chapter 4 will reduce the potential for adverse effects.

5.2. Determinations

5.2.1. Federally Listed or Proposed Plant Species and Critical Habitat

The FESA Section 7 effects determinations are that the proposed project will have no effect on Morro manzanita (*Arctostaphylos morroensis*), marsh sandwort (*Arenaria paludicola*), California jewelflower (*Caulanthus californicus*), Chorro Creek bog thistle/San Luis Obispo fountain thistle (*Cirsium fontinale* var. *obispoense*), Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*), and spreading navarretia (*Navarretia fossalis*). The basis for these determinations is that there is no suitable habitat for any of the federally listed plant species considered, none were observed during appropriately timed floristic surveys, and none are expected to occur in the BSA. The proposed project will have no effect on federally designated critical habitat for these species, because the BSA does not occur within critical habitat units for these species.

5.2.2. Federally Listed or Proposed Animal Species and Critical Habitat

The FESA Section 7 effects determinations are that the proposed action will have no effect on vernal pool fairy shrimp (*Branchinecta lynchi*), Kern primrose sphinx moth (*Euproserpinus euterpe*), California tiger salamander (*Ambystoma californiense*), blunt-nosed leopard lizard (*Gambelia silus*), California condor (*Gymnogyps californianus*) California clapper rail (*Rallus longirostris obsoletus*), giant kangaroo rat (*Dipodomys ingens*), or San Joaquin kit fox (*Vulpes macrotis mutica*). The basis for these determinations is that the BSA does not support suitable habitat for these species and none of these species were observed during surveys or otherwise expected to occur within the BSA. The proposed action will have no effect on federally designated critical habitat for these species, because the BSA does not occur within critical habitat units for these species.

5.2.2.1. SOUTH-CENTRAL CALIFORNIA COAST STEELHEAD (*ONCORHYNCHUS MYKISS*)

The FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, south-central California steelhead. The basis for this determination is that steelhead are known to occupy San Luis Obispo Creek and there would be potential for take of the species during construction.

Based on the potential for temporary and permanent impacts, the FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, south-central California coast steelhead critical habitat.

5.2.2.2. CALIFORNIA RED-LEGGED FROG (*RANA DRAYTONII*)

The FESA Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, California red-legged frog. The basis for this determination is that California red-legged frog presence has been inferred and there would be potential for take of the species during construction. The avoidance and minimization measures below are the relevant Programmatic Biological Opinion measures to qualify a project for programmatic concurrence for the purposes of USFWS formal consultation (USFWS 2011).

Because the project does not occur within a critical habitat unit for California red-legged frog, the FESA Section 7 effects determination is that the proposed project will have no effect on California red-legged frog critical habitat.

5.2.2.3. LEAST BELL'S VIREO (*VIREO BELLII PUSILLUS*), SOUTHWESTERN WILLOW FLYCATCHER (*EMPIDONAX TRAILLII EXTIMUS*), AND WESTERN YELLOW-BILLED CUCKOO (*COCCYZUS AMERICANUS OCCIDENTALIS*)

Because of their extremely low likelihood of occurrence and that avoidance and minimization measures will be employed to protect all nesting bird species, the FESA Section 7 effects determination is that the proposed project may affect, but is not likely to adversely affect, least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo.

Because the project does not occur within a critical habitat unit for least Bell's vireo, southwestern willow flycatcher, or western yellow-billed cuckoo, the FESA Section 7 effects determination is that the proposed project will have no effect on least Bell's vireo, southwestern willow flycatcher, or western yellow-billed cuckoo critical habitat.

Chapter 6. References

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Appendix A - USFWS, NMFS, and CNDDB Species Lists

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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: March 09, 2020
Consultation Code: 08EVEN00-2019-SLI-0516
Event Code: 08EVEN00-2020-E-00595
Project Name: Prado Road Bridge Widening Project

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

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.

[*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

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

Project Summary

Consultation Code: 08EVEN00-2019-SLI-0516

Event Code: 08EVEN00-2020-E-00595

Project Name: Prado Road Bridge Widening Project

Project Type: TRANSPORTATION

Project Description: The City of San Luis Obispo (City) Department of Public Works, with funding from the Federal Highway Administration and oversight by the California Department of Transportation (Caltrans), proposes to widen or replace the Prado Road Bridge (Bridge Number 49C-107). Prado Road Bridge is in the southern portion of the city of San Luis Obispo, San Luis Obispo County, California. The bridge spans San Luis Obispo Creek on Prado Road between the U.S. Highway 101 and South Higuera Street. Construction is anticipated for 2021.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.25490856289157N120.66981365651336W

Counties: San Luis Obispo, CA

Endangered Species Act Species

There is a total of 17 threatened, endangered, or candidate species on this species list.

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

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

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

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
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo *Vireo bellii pusillus* 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
Southwestern Willow Flycatcher *Empidonax traillii extimus* 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

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Insects

NAME	STATUS
Kern Primrose Sphinx Moth *Euproserpinus euterpe* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7881	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* 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
California Jewelflower *Caulanthus californicus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4599	Endangered
Chorro Creek Bog Thistle *Cirsium fontinale var. obispoense* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5991	Endangered
Marsh Sandwort *Arenaria paludicola* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered
Morro Manzanita *Arctostaphylos morroensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2934	Threatened
Pismo Clarkia *Clarkia speciosa ssp. immaculata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5936	Endangered
Spreading Navarretia *Navarretia fossalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1334	Threatened

Critical habitats

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

From: NMFSWCRCA Specieslist - NOAA Service Account
To: Geoff Hoetker
Subject: Re: updated NMFS Species List - Prado Road Bridge Widening Project - Caltrans under FHWA NEPA Delegation
Date: Monday, March 9, 2020 11:14:02 AM

EXTERNAL: This email originated from outside SWCA. Please use caution when replying.

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

Geoff Hoetker

From: Geoff Hoetker
Sent: Monday, March 9, 2020 11:14 AM
To: nmfswcrca.specieslist@noaa.gov
Subject: updated NMFS Species List - Prado Road Bridge Widening Project - Caltrans under FHWA NEPA Delegation

Quad Name **San Luis Obispo**
Quad Number **35120-C6**

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) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

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

ESA Marine Invertebrates

Range Black Abalone (E) -

1

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

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

ESA Whales

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

ESA Pinnipeds

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

Essential Fish Habitat

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

MMPA Species (See list at left)

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

MMPA Cetaceans -
MMPA Pinnipeds -

2

The City of San Luis Obispo (City) Department of Public Works, with funding from the Federal Highway Administration and oversight by the California Department of Transportation (Caltrans), proposes to widen or replace the Prado Road Bridge (Bridge Number 49C-107). Prado Road Bridge is in the southern portion of the city of San Luis Obispo, San Luis Obispo County, California. The bridge spans San Luis Obispo Creek on Prado Road between the U.S. Highway 101 and South Higuera Street.

Geoff Hoetker
Senior Biologist / Project Manager

SWCA Environmental Consultants
1422 Monterey Street, B-C200
San Luis Obispo, CA 93401
Direct 805.543.7141 *(Please note the change to my direct line)*

3

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Morro Bay North (3512047) OR Atascadero (3512046) OR Santa Margarita (3512045) OR Morro Bay South (3512037) OR San Luis Obispo (3512036) OR Lopez Mtn. (3512035) OR Port San Luis (3512027) OR Pismo Beach (3512026) OR Arroyo Grande NE (3512025))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Agrostis hooveri Hoover's bent grass	PMPOA040M0	None	None	G2	S2	1B.2
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anniella pulchra northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos luciana Santa Lucia manzanita	PDERI040N0	None	None	G2	S2	1B.2
Arctostaphylos morroensis Morro manzanita	PDERI040S0	Threatened	None	G1	S1	1B.1
Arctostaphylos osoensis Oso manzanita	PDERI042S0	None	None	G1	S1	1B.2
Arctostaphylos pechoensis Pecho manzanita	PDERI04140	None	None	G2	S2	1B.2
Arctostaphylos pilosula Santa Margarita manzanita	PDERI042Z0	None	None	G2?	S2?	1B.2
Arctostaphylos rudis sand mesa manzanita	PDERI041E0	None	None	G2	S2	1B.2
Arctostaphylos tomentosa ssp. daciticola dacite manzanita	PDERI041HD	None	None	G4T1	S1	1B.1
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Astragalus didymocarpus var. milesianus Miles' milk-vetch	PDFAB0F2X3	None	None	G5T2	S2	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC

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Selected Elements by Scientific 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
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Batrachoseps minor lesser slender salamander	AAAAD02170	None	None	G1	S1	SSC
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Bryoria spiralifera twisted horsehair lichen	NLTEST5460	None	None	G1G2	S1S2	1B.1
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Calochortus obispoensis San Luis mariposa-lily	PMLIL0D110	None	None	G2	S2	1B.2
Calochortus simulans La Panza mariposa-lily	PMLIL0D170	None	None	G2	S2	1B.3
Calystegia subacaulis ssp. episcopalis Cambria morning-glory	PDCON040J1	None	None	G3T2?	S2?	4.2
Camissoniopsis hardhamiae Hardham's evening-primrose	PDONA030N0	None	None	G2	S2	1B.2
Carex obispoensis San Luis Obispo sedge	PMCYP039J0	None	None	G3?	S3?	1B.2
Castilleja densiflora var. obispoensis San Luis Obispo owl's-clover	PDSCR0D453	None	None	G5T2	S2	1B.2
Ceanothus impressus var. nipomensis Nipomo Mesa ceanothus	PDRHA040L2	None	None	G3T2	S2	1B.2
Ceanothus thyrsiflorus var. obispoensis San Luis Obispo ceanothus	PDRHA04461	None	None	G5T1	S1	1B.1
Central Dune Scrub Central Dune Scrub	CTT21320CA	None	None	G2	S2.2	
Central Foredunes Central Foredunes	CTT21220CA	None	None	G1	S1.2	
Central Maritime Chaparral Central Maritime Chaparral	CTT37C20CA	None	None	G2	S2.2	
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T1T2	S1S2	1B.1
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC

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Report Printed on Monday, March 09, 2020 — **Information Expires 9/1/2020**

Selected Elements by Scientific 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
Chenopodium littoreum coastal goosefoot	PDCHE091Z0	None	None	G1	S1	1B.2
Chlorogalum pomeridianum var. minus dwarf soaproot	PMLIL0G042	None	None	G5T3	S3	1B.2
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
Chorizanthe aphanantha Irish Hills spineflower	PDPGN04110	None	None	G1	S1	1B.1
Chorizanthe breweri Brewer's spineflower	PDPGN04050	None	None	G3	S3	1B.3
Chorizanthe rectispina straight-awned spineflower	PDPGN040N0	None	None	G2	S2	1B.3
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Cirsium fontinale var. obispoense Chorro Creek bog thistle	PDAST2E162	Endangered	Endangered	G2T2	S2	1B.2
Cirsium occidentale var. lucianum Cuesta Ridge thistle	PDAST2E1Z6	None	None	G3G4T2	S2	1B.2
Cirsium rhothophilum surf thistle	PDAST2E2J0	None	Threatened	G1	S1	1B.2
Cladonia firma popcorn lichen	NLT0008460	None	None	G4	S1	2B.1
Clarkia speciosa ssp. immaculata Pismo clarkia	PDONA05111	Endangered	Rare	G4T1	S1	1B.1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Delphinium parryi ssp. blochmaniae dune larkspur	PDRAN0B1B1	None	None	G4T2	S2	1B.2
Delphinium parryi ssp. eastwoodiae Eastwood's larkspur	PDRAN0B1B2	None	None	G4T2	S2	1B.2
Delphinium umbraculorum umbrella larkspur	PDRAN0B1W0	None	None	G3	S3	1B.3

Commercial Version -- Dated March, 1 2020 -- Biogeographic Data Branch — Page 3 of 7

Report Printed on Monday, March 09, 2020 — **Information Expires 9/1/2020**

Selected Elements by Scientific 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
Dipodomys heermanni morroensis Morro Bay kangaroo rat	AMAFD03063	Endangered	Endangered	G3G4TH	SH	FP
Dithyrea maritima beach spectaclepod	PDBRA10020	None	Threatened	G1	S1	1B.1
Dudleya abramsii ssp. bettinae Betty's dudleya	PDCRA04011	None	None	G4T2	S2	1B.2
Dudleya abramsii ssp. murina mouse-gray dudleya	PDCRA04012	None	None	G4T2	S2	1B.3
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eriastrum luteum yellow-flowered eriastrum	PDPLM03080	None	None	G2	S2	1B.2
Erigeron blochmaniae Blochman's leafy daisy	PDAST3M5J0	None	None	G2	S2	1B.2
Eriodictyon altissimum Indian Knob mountainbalm	PDHYD04010	Endangered	Endangered	G1	S1	1B.1
Eryngium aristulatum var. hooveri Hoover's button-celery	PDAPI0Z043	None	None	G5T1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Eumetopias jubatus Steller (=northern) sea-lion	AMAJC03010	Delisted	None	G3	S2	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Fritillaria ojaiensis Ojai fritillary	PMLIL0V0N0	None	None	G3	S3	1B.2
Fritillaria viridea San Benito fritillary	PMLIL0V0L0	None	None	G2	S2	1B.2
Helminthoglypta walkeriana Morro shoulderband (=banded dune) snail	IMGASC2510	Endangered	None	G1	S1S2	

Selected Elements by Scientific 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
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Layia jonesii Jones' layia	PDAST5N090	None	None	G2	S2	1B.2
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lupinus ludovicianus San Luis Obispo County lupine	PDFAB2B2G0	None	None	G1	S1	1B.2
Malacothamnus gracilis slender bush-mallow	PDMAL0Q0J0	None	None	G1Q	S1	1B.1
Malacothamnus palmeri var. palmeri Santa Lucia bush-mallow	PDMAL0Q0B5	None	None	G3T2Q	S2	1B.2
Monardella palmeri Palmer's monardella	PDLAM180H0	None	None	G2	S2	1B.2
Monardella sinuata ssp. sinuata southern curly-leaved monardella	PDLAM18161	None	None	G3T2	S2	1B.2
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Muhlenbergia utilis aparejo grass	PMPOA481X0	None	None	G4	S2S3	2B.2
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Nemacaulis denudata var. denudata coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Interior Cypress Forest Northern Interior Cypress Forest	CTT83220CA	None	None	G2	S2.2	
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC

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Selected Elements by Scientific 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
Oncorhynchus mykiss irideus pop. 9 steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plagiobothrys uncinatus hooked popcornflower	PDBOR0V170	None	None	G2	S2	1B.2
Plebejus icarioides moroensis Morro Bay blue butterfly	IILEPG801B	None	None	G5T2	S2	
Poa diaboli Diablo Canyon blue grass	PMPOA4Z390	None	None	G2	S2	1B.2
Polyphylla nubila Atascadero June beetle	IICOL68040	None	None	G1	S1	
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Pyrgulopsis taylori San Luis Obispo pyrg	IMGASJ0A50	None	None	G1	S1	
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G5T1	S1	FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Sanicula maritima adobe sanicle	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Scrophularia atrata black-flowered figwort	PDSCR1S010	None	None	G2?	S2?	1B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Sidalcea hickmanii ssp. anomala Cuesta Pass checkerbloom	PDMAL110A1	None	Rare	G3T1	S1	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Suaeda californica California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
Sulcaria isidiifera splitting yarn lichen	NLTEST0020	None	None	G1	S1	1B.1
Taricha torosa Coast Range newt	AAAAF02032	None	None	G4	S4	SSC

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Selected Elements by Scientific 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
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	

Record Count: 128

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Appendix B - Preliminary Project Plans

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Dist	COUNTY	ROUTE	TOTAL PROJECT	No.	SHEETS
05	SLO	LOCAL	N/A	1	13

CITY OF SAN LUIS OBISPO

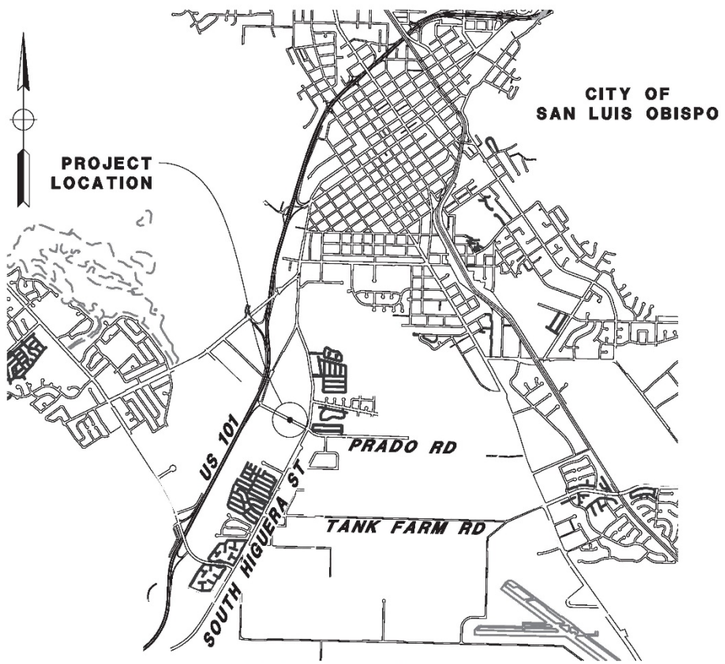
DEPARTMENT OF PUBLIC WORKS

PROJECT PLANS FOR CONSTRUCTION OF
PRADO ROAD BRIDGE WIDENING

IN SAN LUIS OBISPO COUNTY
IN THE CITY OF SAN LUIS OBISPO
ALONG PRADO ROAD

TO BE SUPPLEMENTED BY CITY OF SAN LUIS OBISPO STANDARD DETAILS
AND STATE OF CALIFORNIA STANDARD PLANS DATED 2010

SHEET No.	SHEET ID	DESCRIPTION
1	T-1	TITLE & LOCATION MAP
2	X-1	TYPICAL CROSS SECTIONS
3	L-1	PLAN AND PROFILE
4	G-1	CONTOUR GRADING PLAN
5	D-1	DRAINAGE PLAN
6	U-1	UTILITY PLAN
8	SC-2	CONSTRUCTION STAGING PLAN
7	SC-1	CONSTRUCTION STAGING PLAN
9	PD-1	PAVEMENT DELINEATION PLAN
10	X-2	TYPICAL CROSS SECTIONS (BID ALTERNATIVE)
11	L-2	PLAN AND PROFILE (BID ALTERNATIVE)
12	G-2	CONTOUR GRADING PLAN (BID ALTERNATIVE)
13	G-3	CONTOUR GRADING PLAN (BID ALTERNATIVE)



VICINITY MAP

LOCATION MAP

CITY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS
919 PALM STREET
SAN LUIS OBSIPO, CA 93401

SCALE: HORIZ N/A
VERT N/A

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

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PROJECT ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
DAVID B. MORGAN
No. 54408
FOR PLAN REVIEW ONLY
NOT FOR CONSTRUCTION
CIVIL
STATE OF CALIFORNIA

REVISIONS

NO.	BY	DATE	DESCRIPTION	APPROVED BY	DATE
△					
△					
△					
△					

ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER

NAME OF CITY REP RCE: RCE_NO DATE

PRADO ROAD BRIDGE WIDENING

TITLE & LOCATION MAP

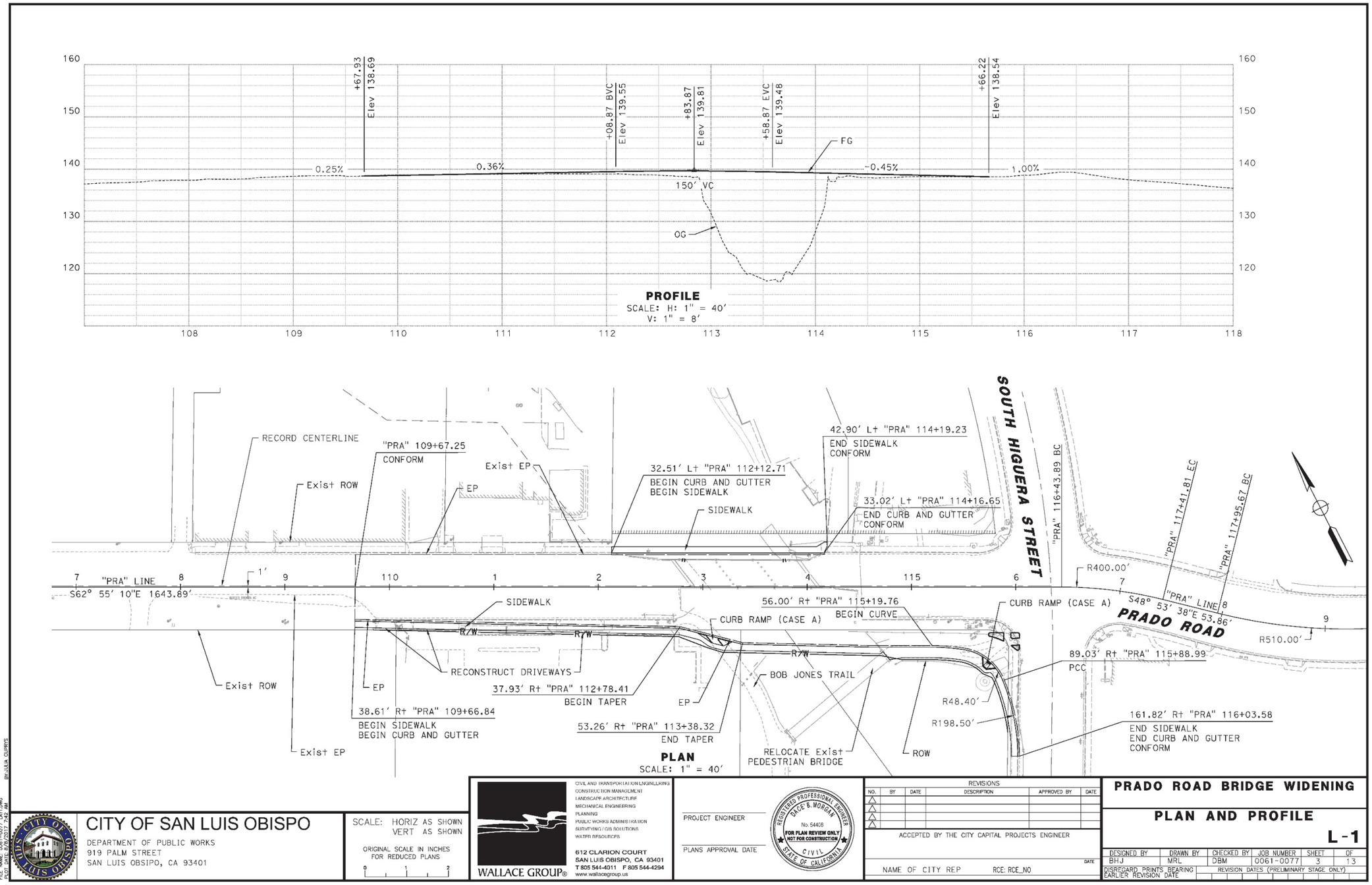
T-1

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
EB	MRL	DBM	0061-0077	1	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE

REVISION DATES (PRELIMINARY STAGE ONLY)

PLOT DATE: 9/8/2017 8:10 AM BY: JULIA CLIFFORS WC PROJECT NO: 0061-0077


PROFILE
SCALE: H: 1" = 40'
V: 1" = 8'
+67.93 Elev 138.69
+08.87 BVC Elev 139.55
+83.87 Elev 139.81
+58.87 EVC Elev 139.48
+66.22 Elev 138.54
0.25%
0.36%
-0.45%
1.00%
150' VC
FG
OG
PLAN
SCALE: 1" = 40'
RECORD CENTERLINE
"PRA" 109+67.25 CONFORM
Exist ROW
Exist EP
EP
32.51' Lt "PRA" 112+12.71 BEGIN CURB AND GUTTER BEGIN SIDEWALK
SIDEWALK
42.90' Lt "PRA" 114+19.23 END SIDEWALK CONFORM
33.02' Lt "PRA" 114+16.65 END CURB AND GUTTER CONFORM
SOUTH HIGUERA STREET
"PRA" 116+43.89 BC
"PRA" 117+41.81 EC
"PRA" 117+95.67 BC
"PRA" LINE
S62° 55' 10"E 1643.89'
R400.00'
S48° 53' 38"E 53.86'
PRADO ROAD
R510.00'
56.00' Rt "PRA" 115+19.76 BEGIN CURVE
CURB RAMP (CASE A)
R/W
RECONSTRUCT DRIVEWAYS
BOB JONES TRAIL
89.03' Rt "PRA" 115+88.99 PCC
37.93' Rt "PRA" 112+78.41 BEGIN TAPER
38.61' Rt "PRA" 109+66.84 BEGIN SIDEWALK BEGIN CURB AND GUTTER
53.26' Rt "PRA" 113+38.32 END TAPER
R48.40'
R198.50'
161.82' Rt "PRA" 116+03.58 END SIDEWALK END CURB AND GUTTER CONFORM
RELOCATE Exist PEDESTRIAN BRIDGE
ROW
CITY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS
919 PALM STREET
SAN LUIS OBISPO, CA 93401
SCALE: HORIZ AS SHOWN VERT AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
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DAVID B. MORGAN
No. 54408
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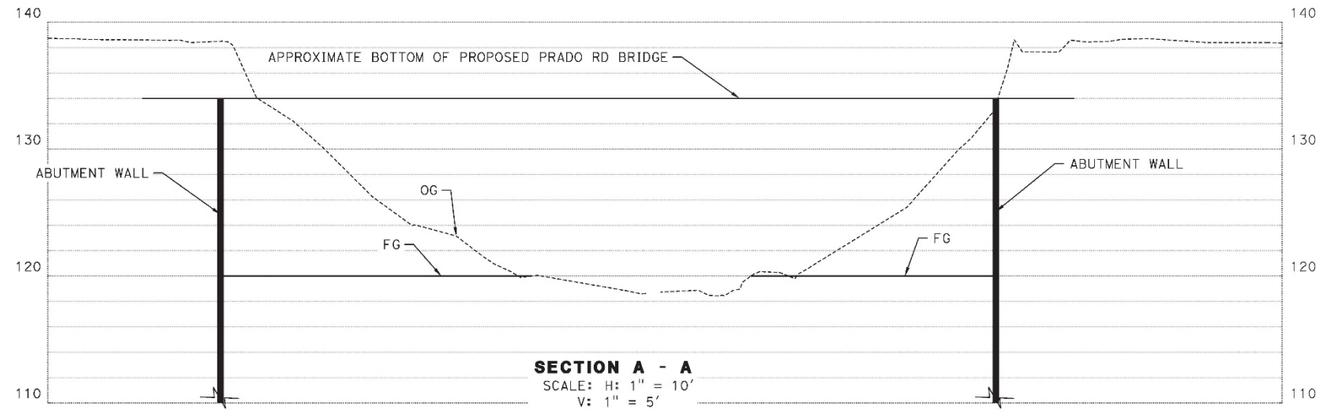
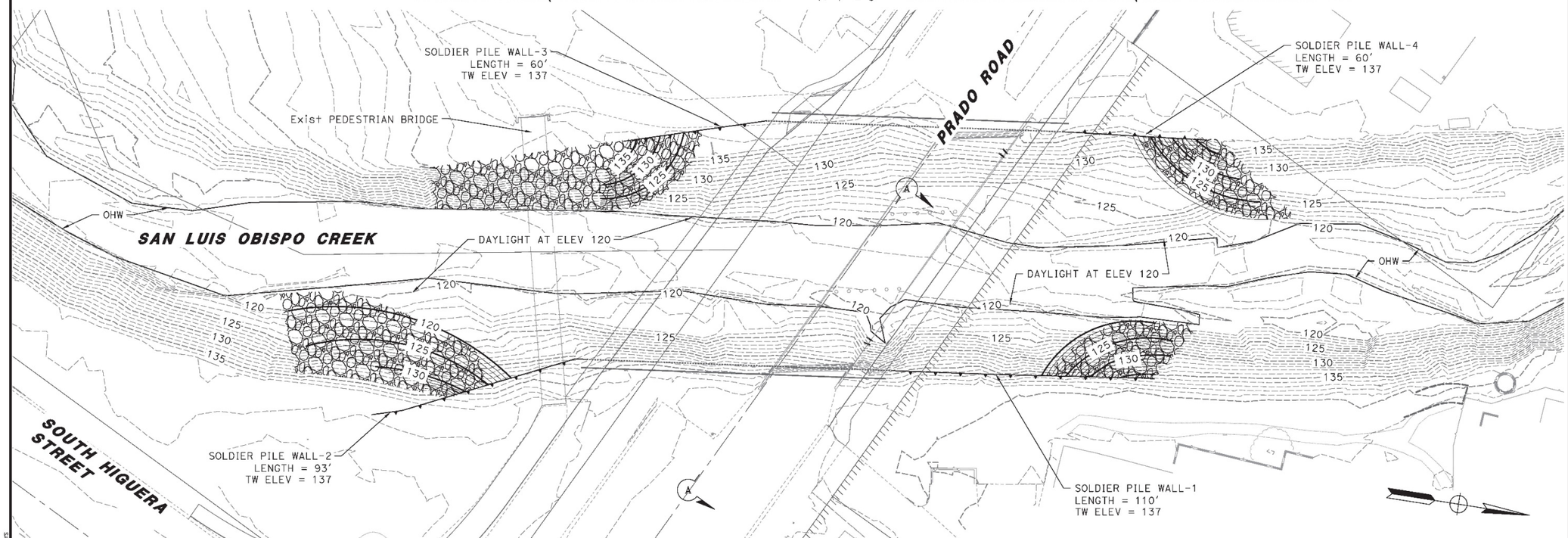
STATE OF CALIFORNIA
REVISIONS
NO. BY DATE DESCRIPTION APPROVED BY DATE
ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER
DATE
NAME OF CITY REP RCE: RCE_NO
PRADO ROAD BRIDGE WIDENING
PLAN AND PROFILE
L-1
DESIGNED BY BHJ
DRAWN BY MRL
CHECKED BY DBM
JOB NUMBER 0061-0077
SHEET 3
OF 13
DISREGARD PRINTS BEARING EARLIER REVISION DATE
REVISION DATES (PRELIMINARY STAGE ONLY)
FILE NAME: 0061-0077 LAYT.DWG
PLOT DATE: 8/8/2017 7:42 AM
BY: JULIA CLIFFS

NOTES:

1. GRADE FINISHED SLOPES AT 1.5:1 MAXIMUM, UNLESS OTHERWISE SHOWN.
2. CONSTRUCT 2.5' THICK RSP, CLASS LIGHT TO ELEV. 137.



SECTION A - A
SCALE: H: 1" = 10'
V: 1" = 5'



PLAN
SCALE: 1" = 20'

FILE NAME: 0061-0077 GRAD.DWG
PLOT DATE: 8/8/2017 7:42 AM
BY: JULIA CLIFRTS

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DEPARTMENT OF PUBLIC WORKS
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SCALE: HORIZ AS SHOWN
VERT N/A
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

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REGISTERED PROFESSIONAL ENGINEER
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No. 54408
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STATE OF CALIFORNIA

REVISIONS

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△					
△					
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ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER
DATE
NAME OF CITY REP RCE: RCE_NO

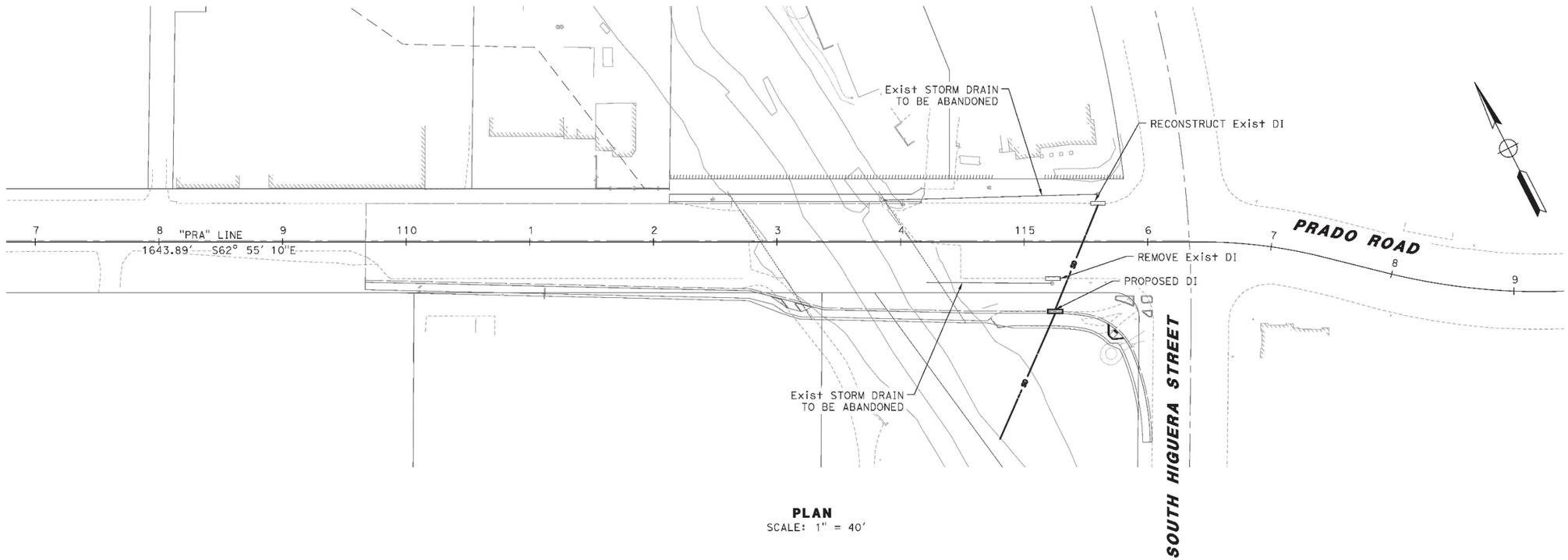
PRADO ROAD BRIDGE WIDENING

CONTOUR GRADING PLAN

G-1

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
EB	MRL	DBM	0061-0077	4	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE
REVISION DATES (PRELIMINARY STAGE ONLY)



PLAN
SCALE: 1" = 40'

BY: JULIA CLIPPYS
FILE NAME: 0061-0077 DRPNLDWG
PLOT DATE: 8/8/2017 7:42 AM

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SCALE: HORIZ AS SHOWN
VERT N/A

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2

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△					

ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER

DATE

NAME OF CITY REP RCE: RCE_NO

PRADO ROAD BRIDGE WIDENING

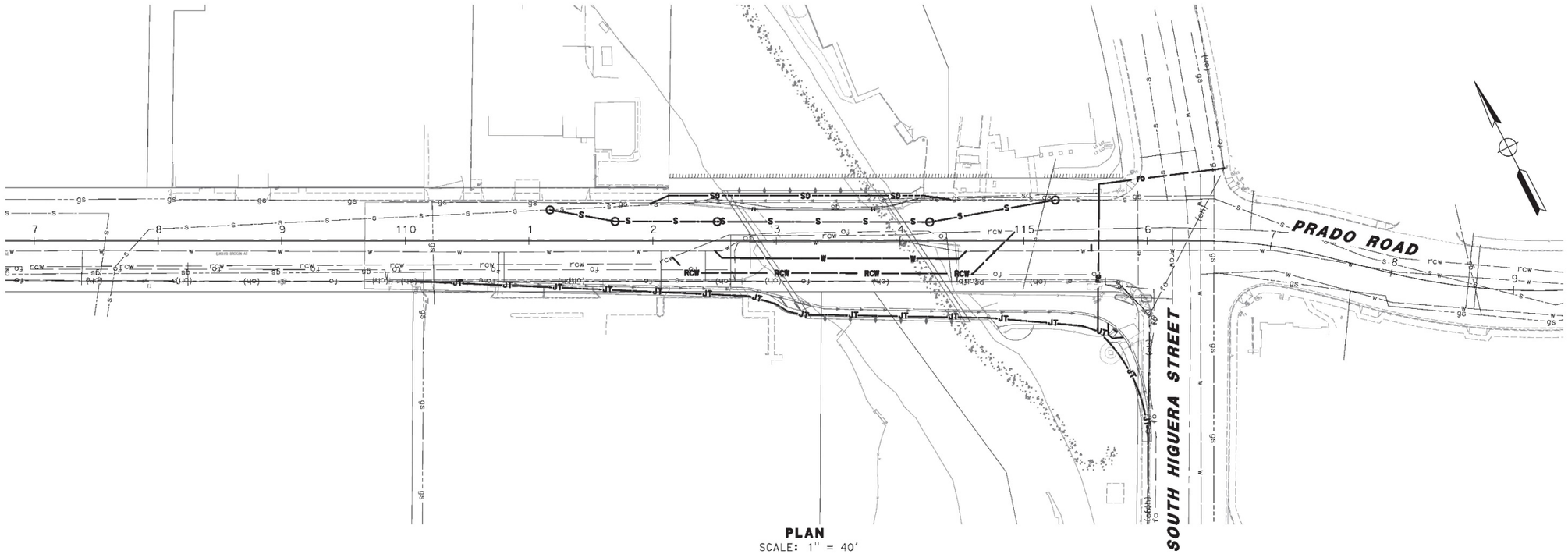
DRAINAGE PLAN

D-1

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
EB	MRL	DBM	0061-0077	5	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE

REVISION DATES (PRELIMINARY STAGE ONLY)



LEGEND

—S—S—	24" SEWER IN 36" STEEL CASING
—JT—JT—	ELEC/COMM/FO IN JOINT TRENCH
—GS—	GAS LINE
—W—	WATER LINE
—RCW—	RECLAIMED WATER LINE
—FO—	FIBER OPTIC (UNDERGROUND)

CITY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS
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SCALE: HORIZ AS SHOWN
VERT N/A

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

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ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER

DATE

NAME OF CITY REP RCE: RCE_NO

PRADO ROAD BRIDGE WIDENING

UTILITY PLAN

U-1

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
EB	MRL	DBM	0061-0077	6	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE

REVISION DATES (PRELIMINARY STAGE ONLY)

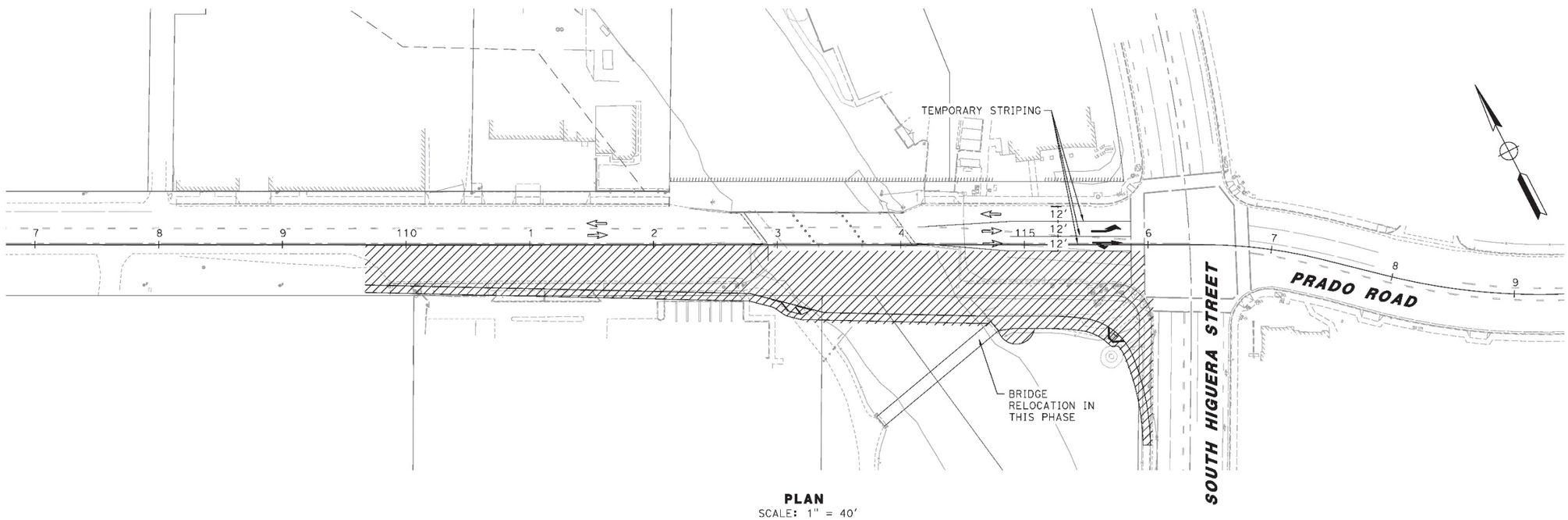
FILE NAME: 0061-0077_UTIL.DWG
PLOT DATE: 8/8/2017 7:43 AM
BY: JULIA CLARKS

LEGEND

AREA OF WORK

DIRECTION OF TRAFFIC

TYPE II ARROW



PLAN
SCALE: 1" = 40'

BY: JULIA CLIPPYS

FILE NAME: 0061-0077 SCNLDWG
PLOT DATE: 8/8/2017 7:44 AM

CITY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS
919 PALM STREET
SAN LUIS OBISPO, CA 93401

SCALE: HORIZ AS SHOWN
VERT N/A

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2

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ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER

DATE

NAME OF CITY REP RCE: RCE_NO

PRADO ROAD BRIDGE WIDENING

CONSTRUCTION STAGING PLAN
STAGE 1 **SC-1**

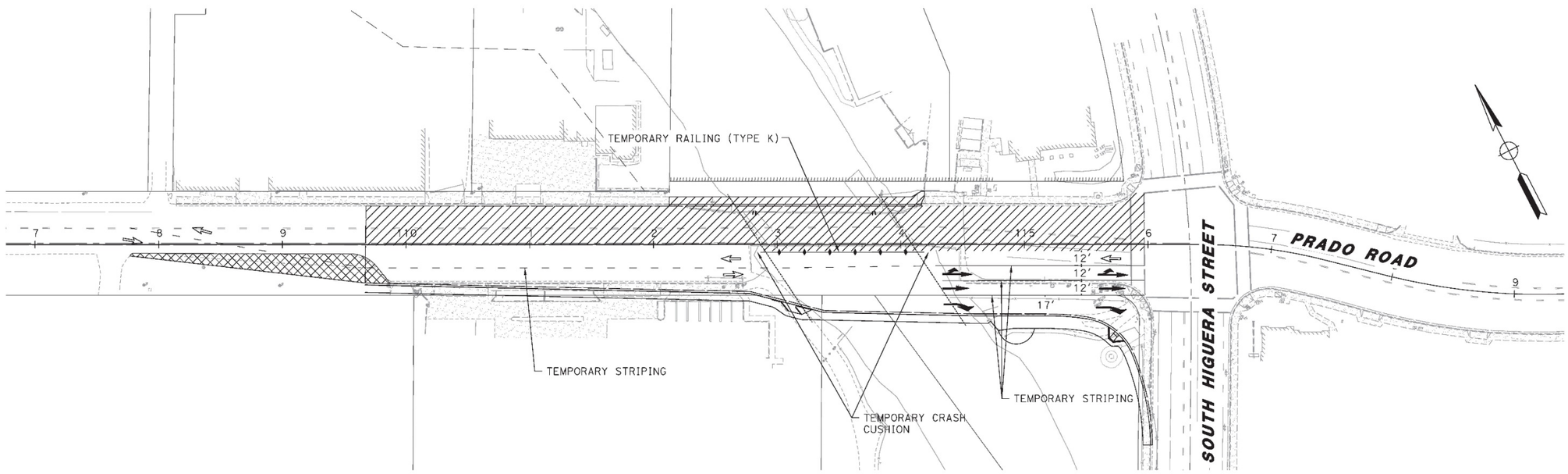
DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
EB	MRL	DBM	0061-0077	7	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE

REVISION DATES (PRELIMINARY STAGE ONLY)

LEGEND

- AREA OF WORK
- DIRECTION OF TRAFFIC
- TEMPORARY HMA
- TYPE I ARROW
- TYPE II ARROW
- TYPE II ARROW



PLAN
SCALE: 1" = 40'

FILE NAME: 0061-0077 SCON.DWG
PLOT DATE: 8/8/2017 7:44 AM
BY: JULIA CLIPPYS

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SCALE: HORIZ AS SHOWN
VERT N/A

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

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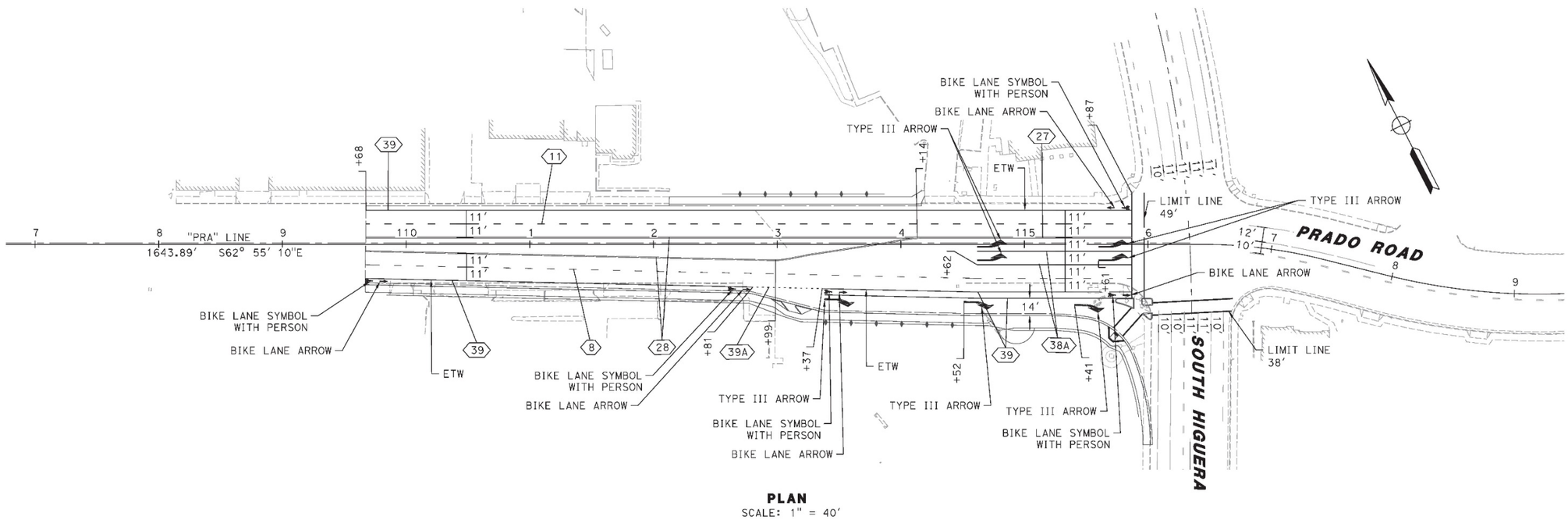
NAME OF CITY REP RCE: RCE_NO

PRADO ROAD BRIDGE WIDENING

CONSTRUCTION STAGING PLAN
STAGE 2 **SC-2**

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
EB	MRL	DBM	0061-0077	8	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE
REVISION DATES (PRELIMINARY STAGE ONLY)



PLAN
SCALE: 1" = 40'

FILE NAME: 0061-0077 PDCLDWG
PLOT DATE: 8/8/2017 7:44 AM
BY: JULIA CLIPPYS

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SCALE: HORIZ AS SHOWN
VERT N/A

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

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ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER
DATE
NAME OF CITY REP RCE: RCE_NO

PRADO ROAD BRIDGE WIDENING

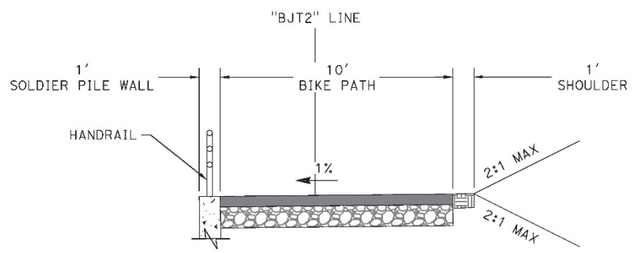
PAVEMENT DELINEATION PLAN
PD-1

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
BHJ	MRL	DBM	0061-0077	9	13

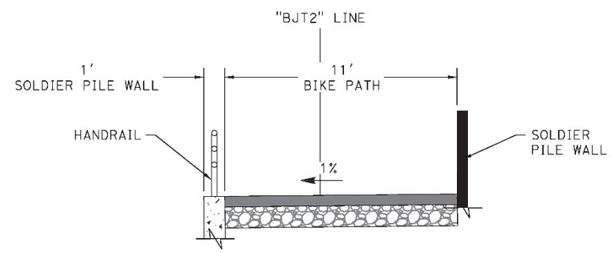
DISREGARD PRINTS BEARING EARLIER REVISION DATE
REVISION DATES (PRELIMINARY STAGE ONLY)

NOTE:

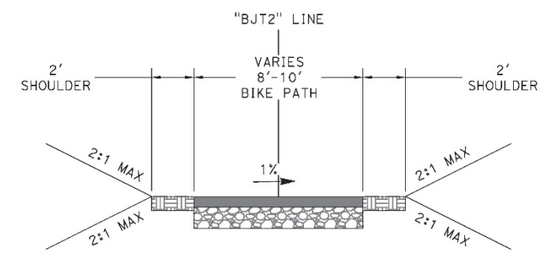
EXISTING AND PROPOSED STRUCTURAL SECTIONS HAVE NOT BEEN DETERMINED. THICKNESSES SHOWN ARE ONLY FOR GRAPHICAL PURPOSES.



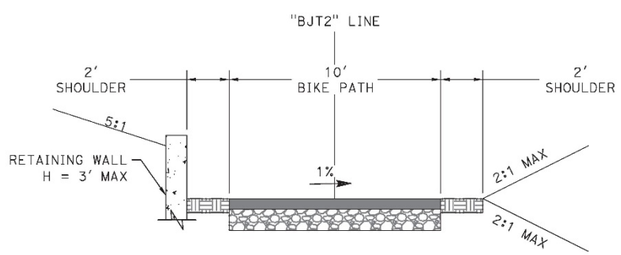
STA "BJT2" 401+68 TO 402+19



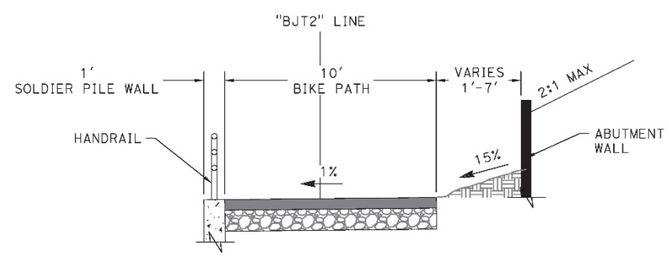
STA "BJT2" 403+12 TO 404+37



STA "BJT2" 406+51 TO 408+93



STA "BJT2" 400+15 TO 401+68



STA "BJT2" 402+19 TO 403+12
STA "BJT2" 404+37 TO 406+51

FILE NAME: 0061-0077 XSEC BIKE.DWG
PLOT DATE: 8/8/2017 7:39 AM
BY: JULIA CLIPPS

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SCALE: HORIZ 1" = 3'
VERT N/A

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

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DATE

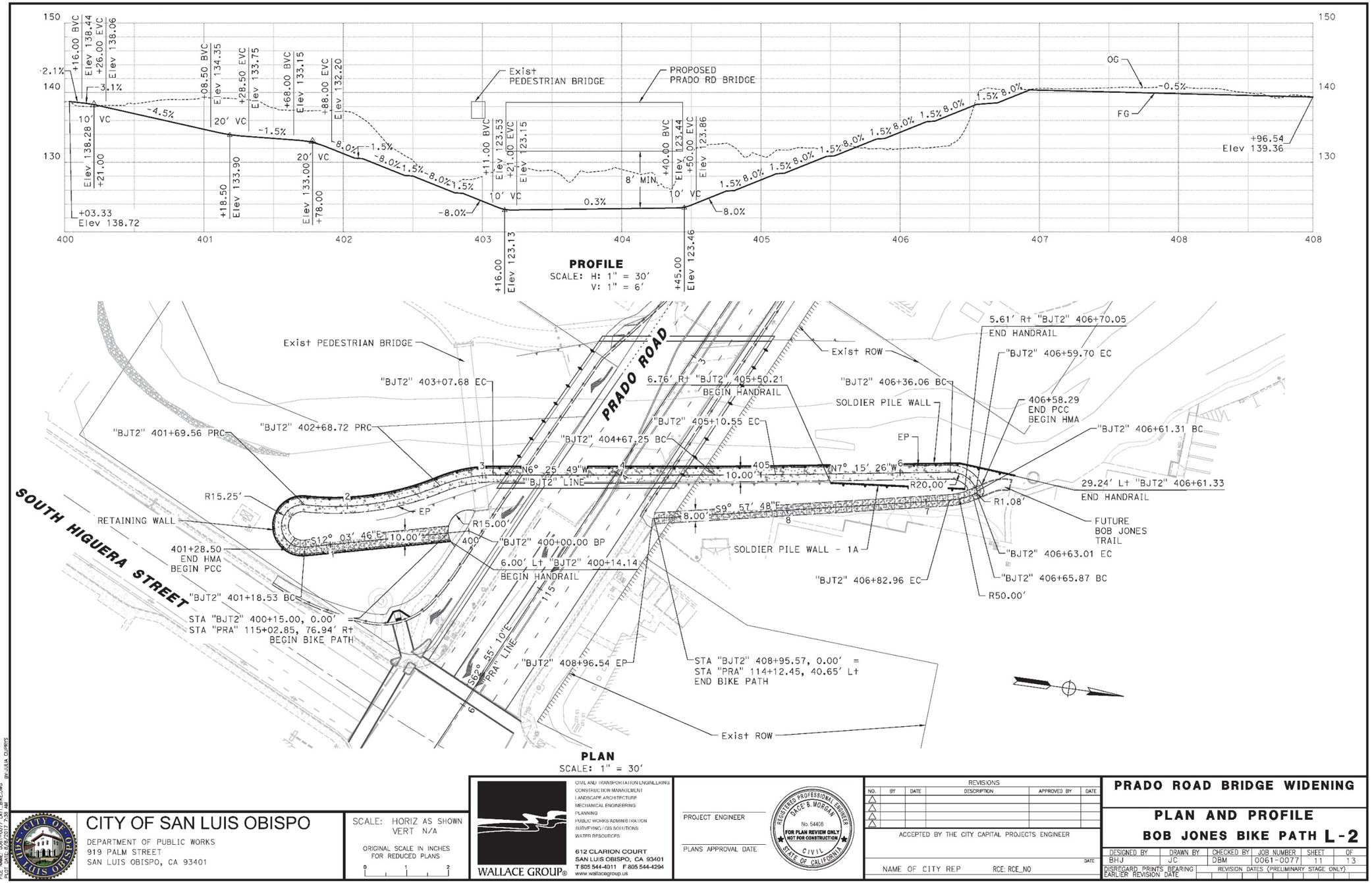
NAME OF CITY REP RCE: RCE_NO

PRADO ROAD BRIDGE WIDENING

TYPICAL CROSS SECTIONS
BOB JONES BIKE PATH X-2

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
BHJ	JC	DBM	0061-0077	10	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE
REVISION DATES (PRELIMINARY STAGE ONLY)


PROFILE
SCALE: H: 1" = 30'
V: 1" = 6'
Exist PEDESTRIAN BRIDGE
PROPOSED PRADO RD BRIDGE
OG
FG
+03.33 Elev 138.72
+16.00 BVC Elev 138.28
Elev 138.44 +26.00 EVC Elev 138.06
+21.00
+08.50 BVC Elev 134.35
+28.50 EVC Elev 133.75
+18.50 Elev 133.90
+68.00 BVC Elev 133.15
+88.00 EVC Elev 132.20
Elev 133.00 +78.00
+11.00 BVC Elev 123.53
+21.00 EVC Elev 123.15
+16.00 Elev 123.13
+40.00 BVC Elev 123.44
+50.00 EVC Elev 123.86
+45.00 Elev 123.46
+96.54 Elev 139.36
8' MIN.
0.3%
-0.5%
PLAN
SCALE: 1" = 30'
PRADO ROAD
SOUTH HIGUERA STREET
Exist PEDESTRIAN BRIDGE
"BJT2" 403+07.68 EC
"BJT2" 401+69.56 PRC
"BJT2" 402+68.72 PRC
6.76' Rt "BJT2" 405+50.21
BEGIN HANDRAIL
"BJT2" 405+10.55 EC
"BJT2" 404+67.25 BC
"BJT2" 406+36.06 BC
SOLDIER PILE WALL
Exist ROW
5.61' Rt "BJT2" 406+70.05
END HANDRAIL
"BJT2" 406+59.70 EC
406+58.29
END PCC
BEGIN HMA
"BJT2" 406+61.31 BC
29.24' Lt "BJT2" 406+61.33
END HANDRAIL
FUTURE
BOB JONES
TRAIL
"BJT2" 406+63.01 EC
"BJT2" 406+65.87 BC
R50.00'
"BJT2" 406+82.96 EC
SOLDIER PILE WALL - 1A
R1.08'
R20.00'
N6° 25' 49"W
N7° 15' 26"W
S9° 57' 48"E
S12° 03' 46"E
10.00'
8.00'
"BJT2" LINE
R15.25'
R15.00'
RETAINING WALL
401+28.50
END HMA
BEGIN PCC
"BJT2" 400+00.00 BP
6.00' Lt "BJT2" 400+14.14
BEGIN HANDRAIL
"BJT2" 401+18.53 BC
STA "BJT2" 400+15.00, 0.00' =
STA "PRA" 115+02.85, 76.94' Rt
BEGIN BIKE PATH
"BJT2" 408+96.54 EP
S62° 55' 10"E
"PRA" LINE
STA "BJT2" 408+95.57, 0.00' =
STA "PRA" 114+12.45, 40.65' Lt
END BIKE PATH
Exist ROW
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VERT N/A
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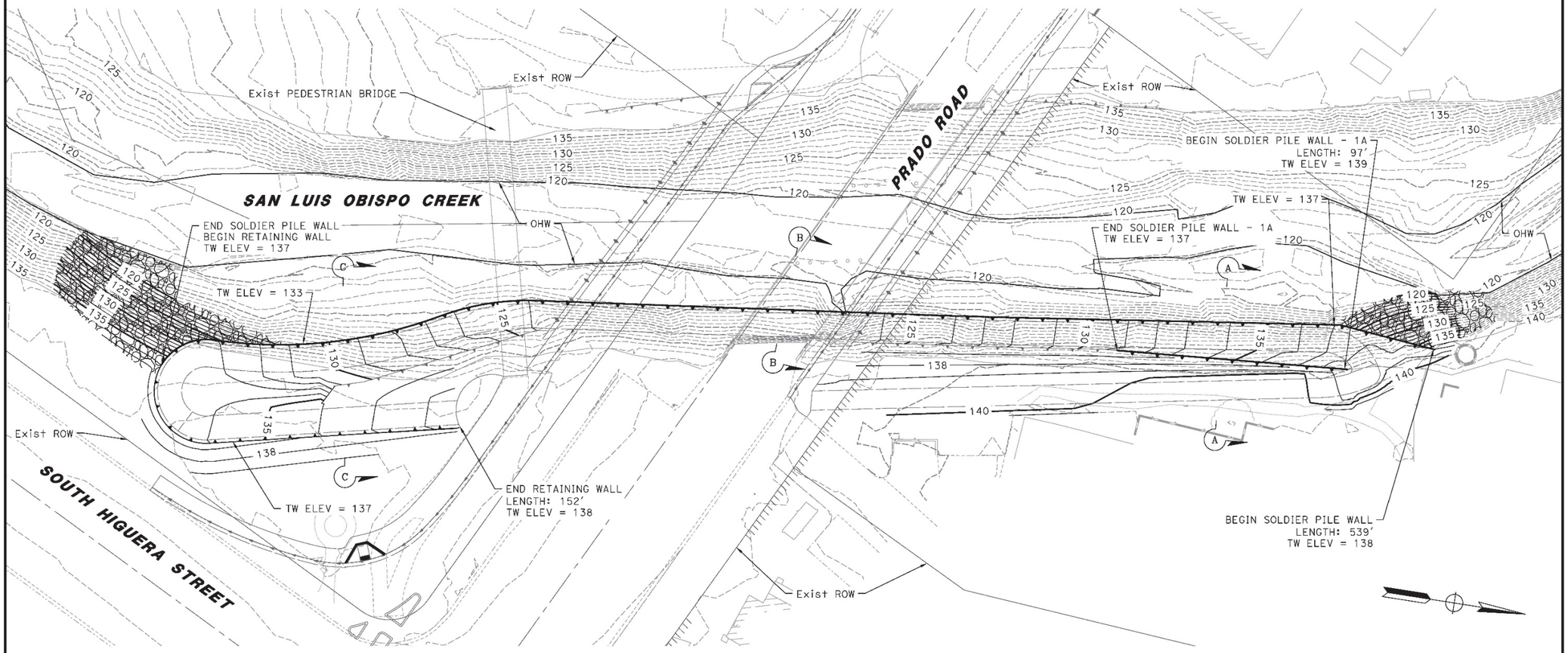
REVISIONS
NO. BY DATE DESCRIPTION APPROVED BY DATE
ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER
NAME OF CITY REP RCE: RCE_NO
DATE
PRADO ROAD BRIDGE WIDENING
PLAN AND PROFILE
BOB JONES BIKE PATH L-2
DESIGNED BY BHJ
DRAWN BY JC
CHECKED BY DBM
JOB NUMBER 0061-0077
SHEET 11
OF 13
DISREGARD PRINTS BEARING EARLIER REVISION DATE
REVISION DATES (PRELIMINARY STAGE ONLY)
FILE NAME: 0061-0077_LAYT_BIKE.DWG
PLOT DATE: 8/8/2017 7:38 AM
BY: JULIA CLIPPS

NOTES:

1. GRADE FINISHED SLOPES AT 1.5:1 MAXIMUM, UNLESS OTHERWISE SHOWN.
2. CONSTRUCT RSP 2' THICK, CLASS LIGHT TO ELEV. 137.
3. FOR SECTIONS SHOWN SEE SHEET G-3.



PLAN
SCALE: 1" = 20'

FILE NAME: 0061-0077 GRAD_BIKE.DWG
PLOT DATE: 8/8/2017 7:39 AM
BY: JULIA OLIVRIS

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SAN LUIS OBISPO, CA 93401

SCALE: HORIZ AS SHOWN
VERT N/A
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

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PRADO ROAD BRIDGE WIDENING

CONTOUR GRADING PLAN
BOB JONES BIKE PATH G-2

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
JC	JC	DBM	0061-0077	12	13

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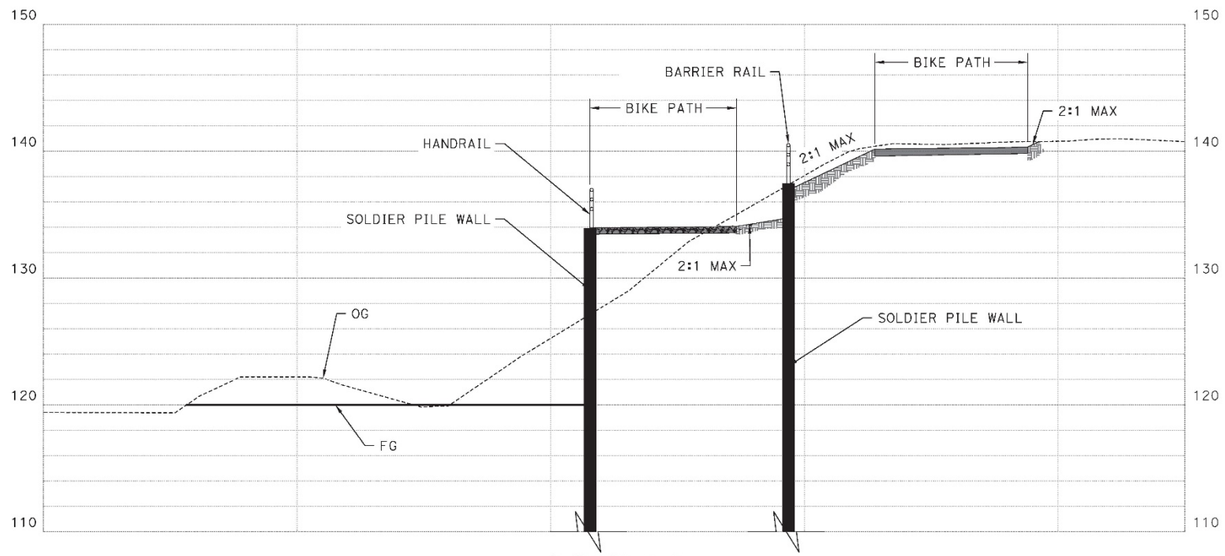
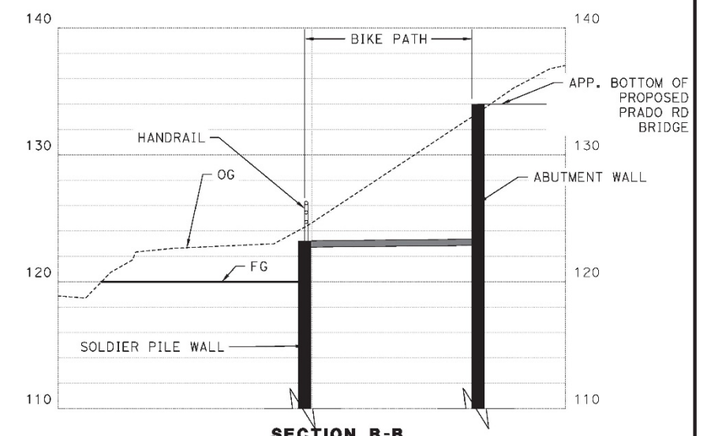
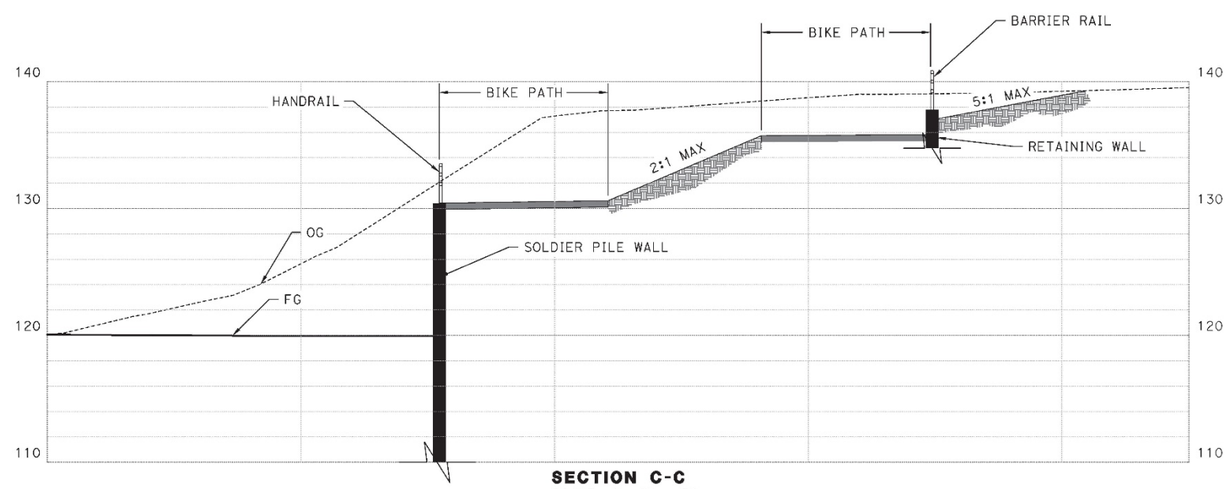


SECTION A-A
SCALE: H: 1" = 5'
V: 1" = 5'



SECTION B-B
SCALE: H: 1" = 5'
V: 1" = 5'



SECTION C-C
SCALE: H: 1" = 5'
V: 1" = 5'

FILE NAME: 0061-0077_GRAD_BIKE.DWG
PLOT DATE: 8/8/2017 7:39 AM BY: JULIA CLARKS

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ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER
DATE
NAME OF CITY REP RCE: RCE_NO

PRADO ROAD BRIDGE WIDENING

CONTOUR GRADING PLAN
BOB JONES BIKE PATH G-3

DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER	SHEET	OF
JC	JC	DBM	0061-0077	13	13

DISREGARD PRINTS BEARING EARLIER REVISION DATE
REVISION DATES (PRELIMINARY STAGE ONLY)

Appendix C - List of Species Observed

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Table C-1: Plant Species Observed

Scientific Name	Common Name	Native	Species Status / Notes
Adoxaceae			
Sambucus nigra ssp. caerulea	blue elderberry	Yes	
Agavaceae			
Yucca gigantea	giant yucca	No	
Anacardiaceae			
Schinus molle	Peruvian pepper tree	No	Cal-IPC limited
Toxicodendron diversilobum	poison oak	Yes	
Apiaceae			
Conium maculatum	poison hemlock	No	Cal-IPC moderate
Daucus pusillus	American wild carrot	Yes	
Foeniculum vulgare	fennel	No	Cal-IPC high
Osmorhiza brachypoda	California sweet cicely	Yes	
Apocynaceae			
Vinca magor	bigleaf periwinkle	No	Cal-IPC moderate
Asteraceae			
Artemisia douglasiana	California mugwort	Yes	
Baccharis pilularis	coyote brush	Yes	
Carduus pycnocephalus	Italian thistle	No	Cal-IPC moderate
Centaurea melitensis	tocalote	No	Cal-IPC moderate
Cirsium vulgare	bull thistle	No	Cal-IPC moderate
Delairea odorata	cape ivy	No	Cal-IPC high
Helenium puberulum	sneezeweed	Yes	
Helminthotheca echioides	bristly oxtongue	No	Cal-IPC limited
Hypochaeris radicata	hairy cat's ear	No	Cal-IPC moderate
Lactuca serriola	prickly lettuce	No	
Silybum marianum	milk thistle	No	Cal-IPC limited
Sonchus asper ssp. asper	prickly sow thistle	No	
Sonchus oleraceus	common sow thistle	No	
Taraxacum officinale ssp. officinale	common dandelion	No	
Brassicaceae			
Brassica nigra	black mustard	No	Cal-IPC moderate
Hirschfeldia incana	summer mustard	No	Cal-IPC moderate
Nasturtium officinale	watercress	Yes	
Raphanus sativus	wild radish	No	Cal-IPC limited
Cupressaceae			
Sequoia sempervirens	coast redwood	Yes	

Scientific Name	Common Name	Native	Species Status / Notes
Cyperaceae			
Cyperus eragrostis	tall flatsedge	Yes	
Euphorbiaceae			
Euphorbia peplus	petty spurge	No	
Ricinus communis	castor bean	No	Cal-IPC limited
Fabaceae			
Genista monspessulana	french broom	No	Cal-IPC high
Medicago polymorpha	burclover	No	Cal-IPC limited
Melilotus indicus	yellow sweetclover	No	
Trifolium hirtum	rose clover	No	Cal-IPC moderate
Vicia benghalensis	purple vetch	No	
Vicia sativa ssp. sativa	spring vetch	No	
Quercus agrifolia	coast live oak	Yes	
Geraniaceae			
Erodium botrys	long beaked filaree	No	
Erodium cicutarium	redstem filaree	No	Cal-IPC limited
Hamamelidaceae			
Liquidambar styraciflua	sweet gum	No	
Juglandaceae			
Juglans californica	southern California black walnut		not CRPR 4.2, planted or naturaized
Lamiaceae			
Salvia apiana	white sage	Yes	
Salvia leucophylla	purple sage	Yes	
Malvaceae			
Malva parviflora	cheeseweed	No	
Myrtaceae			
Eucalyptus globulus	blue gum	No	
Melaleuca citrinus	crimson bottlebrush	No	
Oleaceae			
Fraxinus pennsylvanica	green ash	No	
Oxidalaceae			
Oxalis pes-caprae	Bermuda butercup	No	Cal-IPC moderate
Papaveraceae			
Eschscholzia californica	California poppy	Yes	
Fumaria capreolata	white ramping fumitory	No	

Scientific Name	Common Name	Native	Species Status / Notes
Plantaginaceae			
Plantago lanceolata	English plantain	No	Cal-IPC limited
Plantago major	common plantain	No	
Platanaceae			
Platanus racemosa	western sycamore	Yes	
Poaceae			
Avena barbata	slender wild oat	No	Cal-IPC moderate
Avena fatua	common wild oat	No	Cal-IPC moderate
Avena sativa	cultivated oat	No	Cal-IPC moderate
Bromus diandrus	ripgut brome	No	Cal-IPC moderate
Bromus madritensis ssp. rubens	red brome	No	Cal-IPC high
Elymus triticoides	creeping wild-rye	Yes	
Festuca myuros	rattail fescue	No	Cal-IPC moderate
Festuca perennis	Italian ryegrass	No	Cal-IPC moderate
Hordeum marinum ssp. gussoneanum	seaside barley	No	Cal-IPC moderate
Hordeum murinum ssp. leporinum	hare balrley	No	Cal-IPC moderate
Pennisetum clandestinum	kikuyu grass	No	Cal-IPC limited
Stipa miliacea var. *miliacea*	Smilo grass	No	Cal-IPC limited
Triticum aestivum	wheat	No	
Polygonaceae			
Rumex crispus	curly leaved Dock	No	Cal-IPC limited
Primulaceae			
Lysimachia arvensis	scarlet pimpernel	No	
Rhanmnaceae			
Frangula californica	California coffeeberry	Yes	
Rosaceae			
Cotoneaster franchetii	Francheti cotoneaster	No	Cal-IPC moderate
Cotoneaster lucidus	hedge cotoneaster		
Heteromeles arbutifolia	toyon	Yes	
Rubus armeniacus	Himalayan blackberry	No	Cal-IPC high
Rubus ulmifolius	elmleaf blackberry	No	
Rubus ursinus	California blackberry	Yes	
Salicaceae			
Salix laevigata	red willow	Yes	
Salix lasiolepis	arroyo willow	Yes	
Sapindaceae			
Acer negundo	box elder	Yes	

Scientific Name	Common Name	Native	Species Status / Notes
Scrophulariaceae			
Myoporum laetum	Ngaio tree	No	Cal-IPC moderate
Tropaeolaceae			
Tropaeolum majus	garden nasturtium	No	
Urticaceae			
Urtica dioica	stinging nettle	Yes	

Notes:

Vascular plant nomenclature follows *The Jepson Manual* and http://ucjeps.berkeley.edu/interchange.html.

California Invasive Plant Council (Cal-IPC) Ratings:
High = These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate = These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited = These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Table C-2: Wildlife Species Observed

Scientific Name	Common Name	Species Status / Notes
Birds		
Aphelocoma californica	western scrub-jay	MBTA
Buteo jamaicensis	red-tailed hawk	MBTA
Calypte anna	Anna's hummingbird	MBTA
Cathartes aura	turkey vulture	MBTA
Columba livia	rock pigeon	
Corvus brachyrhynchos	American crow	MBTA
Euphagus cyanocephalus	Brewer's blackbird	MBTA
Hirundo rustica	barn swallow	MBTA
Junco hyemalis	dark-eyed junco	MBTA
Melospiza melodia	song sparrow	MBTA
Melozone crissalis	California towhee	MBTA
Mammals		
Otospermophilus beecheyi	California ground squirrel	
Reptile		
Sceloporus occidentalis	western fence lizard	

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Appendix D - Photo Documentation

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Photo D-1: View east of Prado Road Bridge and San Luis Obispo Creek. Photo taken April 20, 2016.

Photo D-2: View northwest of Prado Road from Prado Road Bridge. Photo taken April 20, 2016.

Photo D-3: View east of Prado Road from west end of Prado Road Bridge. Photo taken April 20, 2016.

Photo D-4: View northwest of Bob Jones Bike Trail adjacent to Prado Road and Prado Road Bridge. Photo taken April 20, 2016.

Photo D-5: View north of Prado Road Bridge, San Luis Obispo Creek, and arroyo willow thicket habitat north from Bob Jones Bike Trail. Photo taken April 20, 2016.

Photo D-6: View south of San Luis Obispo Creek and arroyo willow thicket habitat from Bob Jones Bike Trail. Photo taken April 20, 2016.

Photo D-7: View north of San Luis Obispo Creek and arroyo willow thicket habitat north of Prado Road Bridge. Photo taken April 20, 2016.

Photo D-8: View west of Prado Road Bridge along Prado Road. Photo taken April 20, 2016.

Photo D-9: View southwest from Prado Road of Bob Jones Bike Path and ruderal habitat southeast of Prado Road Bridge. Photo taken April 20, 2016.

Photo D-10: View south from Prado Road of ruderal and developed areas south of the Prado Road Bridge and west of the intersection of Prado Road and South Higuera Street. Photo taken April 20, 2016.

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Appendix E - Diversion and Dewatering Plan

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DIVERSION/DEWATERING PLAN
for the
PRADO ROAD BRIDGE REPLACEMENT PROJECT
Federal Project BRLS-5016(056)

PREPARED FOR:
City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA 93401

PREPARED BY:

WALLACE GROUP

Job Number: 0061-0077
August 2019

WATER DIVERSION

San Luis Creek can have perennial flow and it is likely to be flowing with the project area during construction. A water diversion system will be required to divert the likely summer flow through the work area for the duration of the construction and provide the contractor access around the bridge site. To avoid impacts to fish and other aquatic wildlife, construction within the creek is planned to occur during the non-rainy season (between June 1 and October 15), when flows in San Luis Creek are at a seasonal minimum.

Temporary berms will be constructed both upstream and downstream of the bridge. The berms will be constructed using clean crushed rock and will be used to divert low flows away from the work area. The berms will have an impervious membrane made up of visqueen polyethylene film to keep water from seeping into the work area and downstream away from the project site. The berm will be trapezoidal with 2:1 horizontal to vertical side-slopes and are expected to be at least 5 feet tall. The berms will have a minimum of a 4 foot wide flat top.

Temporary culvert, consisting of approximately two 36-inch pipes, will be used to divert summer flows away from the work area and downstream. The pipes will be approximately 525 feet long and will be installed through the upstream and downstream berms running parallel to the direction of flow. The overall length of the diversion system may be shorter depending on the construction staging over two seasons of construction. The pipes will have 6” x 6” holes cut into the top every 50 feet to be used as inspection ports to verify proper flow of water, identify blockages and verify fish and wildlife passage through the system.

During drier years, this locations of San Luis Creek experiences low flows ranging from zero to 20 cfs during the proposed construction period. In wetter years, flows during the construction period are anticipated to be 40 to 60 cfs. On occasion, an October storm can generate larger flows in the range of 1800 to 2300 cfs. Based on these historical flow records, San Luis Creek flows are expected to be approximately 60 cfs during the non-rainy season. Perennial flow is expected to be conveyed through the planned pipe culverts. Construction of the water diversion system will require minor grading and excavation within San Luis Creek. Clean crushed rock will be used to direct the flow into the pipes. Imported clean crushed rock will be removed offsite or incorporated into the roadway when the no longer needed. The berms will completely block the normal flow of the creek, keeping water out of the work area, allowing only the flow that enters the diversion pipes to pass under the bridge construction. All diversion/dewatering activities will adhere to Caltrans Standard Specifications.

The responsible Contractor will be required to submit plans for exact locations of the berms, pipes, and the diversion plans to the City and other regulatory permitting agencies for approval at least 30 days prior to construction activities.

After the berms are constructed, sump pumps will be used to dewater the site, if necessary. If aquatic life become trapped within the dewatering area, a qualified biologist will be responsible for relocating fish and wildlife to a suitable habitat outside the construction zone, in conformance with state and local regulatory permitting guidelines. The pumped water will be returned to San Luis Creek, downstream of the project. A wire mesh screen with no larger than 0.2 inch holes will be placed over the pump intake and the pump will be placed in a screened basket to reduce the velocity of the water flowing into the pump and minimize turbidity of the water. This system will also minimize inadvertent aquatic interactions. If the pumped water has visible turbidity as compared to the undisturbed river, a portable storage tank will be used as a settling tank to ensure proper sediment filtration before pumping water back into San Luis Creek to prevent

adverse impacts to aquatic resources. A geo-textile bag filter may be used at the discharge point of the sump pump to prevent erosion/scour and to ensure proper sediment filtration. A qualified biologist will monitor the pump intake and outfall during dewatering to protect water quality and verify the system is free of debris. The qualified biologist will also remove fish and wildlife prior to starting the pumping activities and again if animals become trapped or stranded.

Prior to construction activities, a qualified biologist will provide an environmental training session for all project personnel. Information on avoidance and minimization measures for sensitive environmental resources and other pertinent permit terms and conditions of approval will be review during the training.

Weather reports looking to identify peak flow storm events will be monitored daily by a designated onsite qualified person responsible. This designated person will also inspect both berms daily to identify possible leaks and identify containment breaches. Additional supplies including sump pumps, gravel bags, visqueen, and hoses will be staged onsite to be used in the event of an exclusionary device breach. If a full breach of one of the berms does take place, the City and applicable regulatory agencies will be notified by the Contractor's responsible person so water quality and aquatic impacts can be evaluated. The dewatering plan submittal by the Contractor will contain a contingency plan for such an event.

Monitoring

The monitoring of the diversion system will be as follows:

- Monitoring of San Luis Creek's visible water characteristics and water quality monitoring at the project location will take place in advance of any construction related activities for the project to establish a baseline including turbidity, water temperature, dissolved oxygen, and pH.

- Daily monitoring by a qualified member of the Contractor's team during construction will monitor and log visible water characteristics including soil erosion, sedimentation, and turbidity. Samples will be collected twice daily and analyzed for increases in the turbidity levels due to the diversion system.

- Periodic monitoring of water quality including temperature, dissolved oxygen, and pH will be captured at a frequency determined by the City and regulatory agencies.

- Discharge water will not be greater than four degrees Fahrenheit from the receiving water temperature. Water discharges will not reduce the dissolved oxygen level to below 5.0 milligrams per liter (mg/L) and median values should not fall below 85 percent saturation of the baseline measurement and pH will be maintained between 7.0 – 8.5. If water temperature, dissolved oxygen levels, or pH fall outside these ranges, the Contractor's qualified responsible person will immediately notify the City and the project biologist to develop a remediation procedure to improve the water quality and take immediate corrective action.

- If a 24-hour rainfall of 2" or over is predicted, the Contractor will evaluate the status of construction site to determine the stability if the diversion system were to be overtopped. If the construction site is stable, consider accelerating the removal of the diversion

system. Consider anchoring the pipe segments. And finally, remove materials in the diversion area that would be a hazard if the diversion system were to be overtopped.

- In addition, the appropriate regulatory agency will also be notified of baseline changes that fall outside of the pre-project thresholds. At the project conclusion, the Contractor will provide the City and regulatory agencies with the daily and periodic monitoring logs and sampling photos.

- After construction is complete, the contractor will remove the temporary berms and culverts and restore all disturbed areas within the creek to pre-construction conditions. The berms and pipes will be removed by the Contractor in a manner that will provide the least amount of disturbance possible while minimize turbidity in the river.

- The Contractor will submit weekly monitoring and maintenance reports to the Central Coast Water Board during the period when the system is in place. A final report will be submitted after the temporary diversion system has been removed.

Construction Staging and Access

Materials and equipment that will be used during bridge construction will be staged at a designated staging area located adjacent to Prado Road.

The berms are expected to be approximately 4 feet wide (at the top) and 65 feet long. Approximately 375 cubic yards (CY) of fill will be required to construct the temporary berms. The temporary fill will consist of clean crushed rock within the low flow channel and will form the temporary berms upstream and downstream of the construction area.

A temporary construction easement (TCE) will be required for the construction of the downstream berm. The TCE required affects Assessor's Parcel Number (APN) 053-051-067. This parcel is owned by the City of San Luis Obispo.

Construction Equipment

The table below summarizes the types of construction equipment that are anticipated to be used during construction that may be driven on the berms/access roads.

Equipment	Construction Purpose
Air compressor	Concrete removal + finishing work
Backhoe	Earthwork construction + clearing and grubbing
Bobcat	Fill distribution
Bulldozer/loader	Earthwork construction + clearing and grubbing
Crane	Rebar cages + pile installation + resetting of Bob Jones Bike Path bridge + setting of precast girders
Drill rig	Pile installation
Dump truck	Fill material delivery
Excavator	Soil manipulation

Front-end loader	Dirt or gravel manipulation
Grader	Ground leveling
Hoe ram	Concrete removal
Hydraulic hammer	Demolition / concrete removal
Jackhammer	Demolition / concrete removal
Roller / compactor	Earthwork construction
Truck with seed sprayer	BMP installation
Water truck	Earthwork construction + dust control

Appendix F - Conceptual Habitat Mitigation and Monitoring Plan

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CONCEPTUAL HABITAT MITIGATION AND MONITORING PLAN FOR THE PRADO ROAD BRIDGE WIDENING PROJECT

CITY OF SAN LUIS OBISPO, CALIFORNIA

BRIDGE NUMBER 49C-107

BRLS-5016(056)

SEPTEMBER 2019

PREPARED FOR

City of San Luis Obispo
Department of Public Works

PREPARED BY

SWCA Environmental Consultants

CONCEPTUAL HABITAT MITIGATION AND MONITORING PLAN FOR THE PRADO ROAD BRIDGE WIDENING PROJECT CITY OF SAN LUIS OBISPO, CALIFORNIA

FEDERAL PROJECT NUMBER BRLS 5289 (012)

BRIDGE NO. 49C-107

Prepared for

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SWCA Project No. 44844

September 2019

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1 INTRODUCTION

This Conceptual Habitat Mitigation and Monitoring Plan (HMMP) has been prepared by SWCA Environmental Consultants (SWCA) to describe proposed methods for mitigating project impacts to riparian habitats associated with the Prado Road Bridge Widening Project (project). The project is anticipated to result in permanent and temporary impacts to U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) jurisdictions in San Luis Obispo Creek. This document is conceptual and is intended to assist project planners in preparing agency permit applications. The mitigation strategy and implementation methods presented in this Conceptual HMMP will need to be modified or augmented to include site-specific detailed planting and monitoring plans following receipt of agency comments during the permitting process, and a Final HMMP prepared. The Conceptual HMMP incorporates guidelines presented in the *Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division USACE* (USACE 2015), the *Checklist for Compensatory Mitigation Proposals* (USACE 2008a), and the *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* (USACE 2008b).

The previously prepared Prado Road Bridge Widening Project Natural Environmental Study (NES; SWCA 2019) and its associated appendices (such as the Biological Assessment) fully describe the scope and impacts of the proposed project. The project will impact a total of 3.5 acres, including 1.7 acre of upland habitat types and 2.3 acres of riparian and streambed habitat. Of the impacts to riparian and streambed, 1.5 will be temporary and 0.8 will be permanent impacts; Approximately 0.5 acre of the permanent impact area is associated with project components that would be able to support vegetation and provide ecological function after project completion, such as rock slope protection and bio retention basins, although the functions may be considered degraded compared with pre-construction conditions. Additionally, 0.08 acre of the permanent impact area associated with concreate bridge abutments that may encroach within the stream channel.

2 PROJECT AND SITE DESCRIPTION

2.1 Responsible Party and Financial Assurances

As the project permittee, the party responsible for meeting the mitigation obligation pursuant to the special conditions of the project permits is:

City of San Luis Obispo
Department of Public Works
919 Palm Street
San Luis Obispo, CA 93401-3218

The applicant, the City of San Luis Obispo (City), has included sufficient funding in the overall project budget to implement the Final HMMP and any required contingency actions.

2.2 Project Location

Prado Road Bridge is in the southern portion of the City of San Luis Obispo, San Luis Obispo County, California. The bridge spans San Luis Obispo Creek on Prado Road between U.S. Highway 101 and South Higuera Street. (refer to Figures 1 and 2).

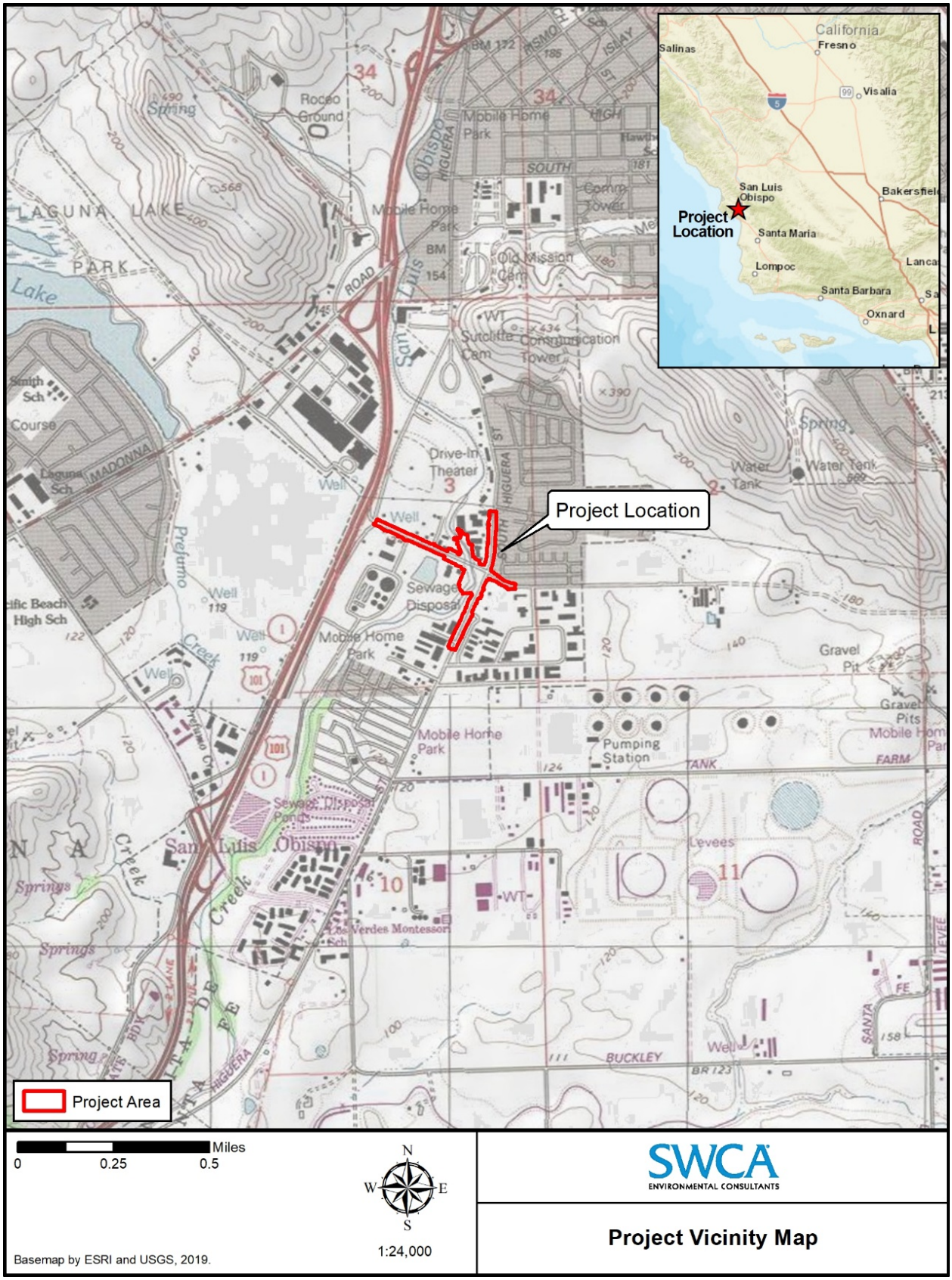

Figure 1. Project Vicinity Map

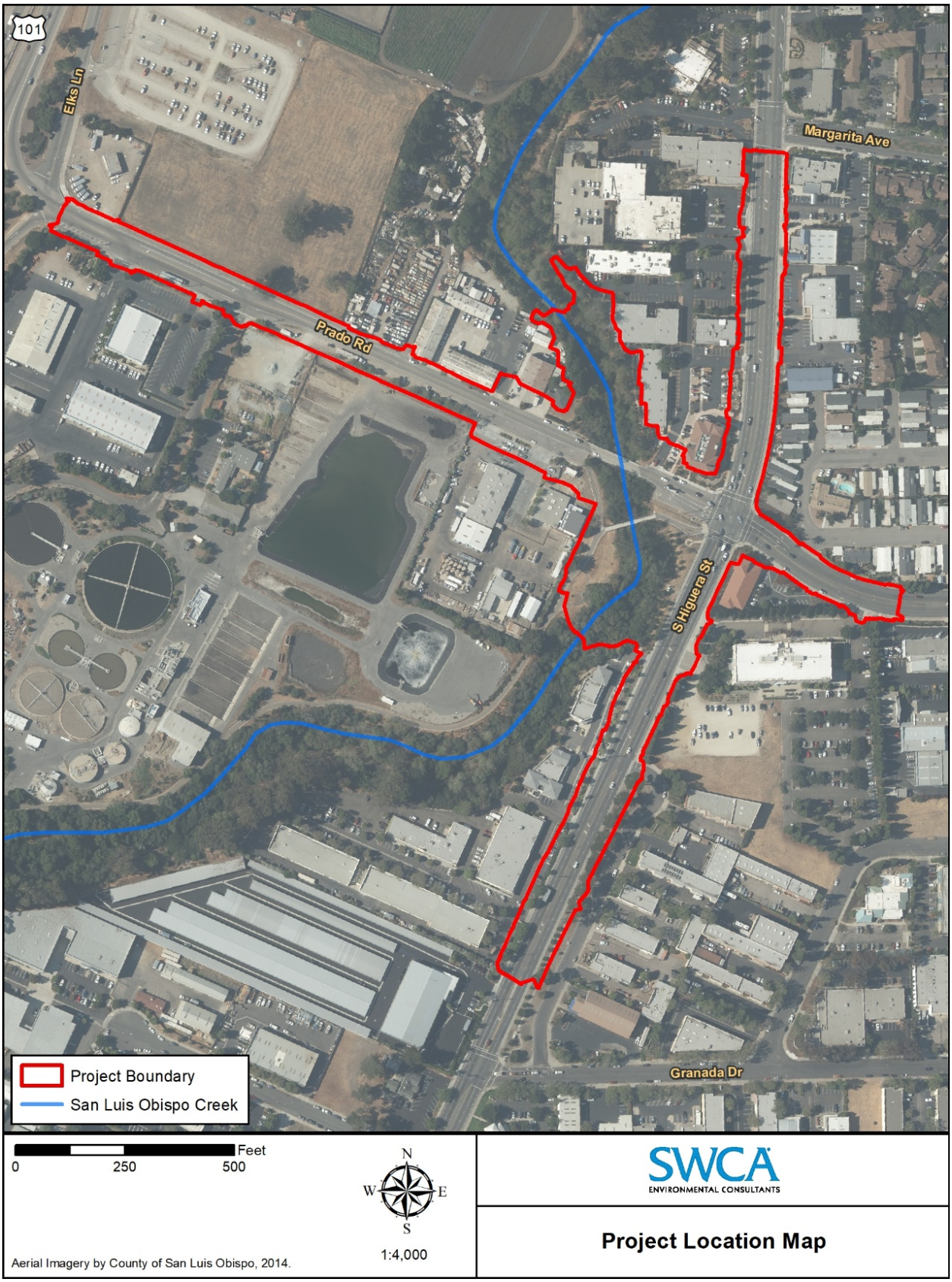

Figure 2. Project Location Map

2.3 Project Summary

The City of San Luis Obispo has determined that the existing Prado Road Bridge over San Luis Obispo Creek needs to be widened to eliminate a current roadway constriction at the bridge and accommodate future traffic needs in the section of Prado Road between US 101 and South Higuera Street. The purpose of the proposed project is to widen the Prado Road Bridge with associated intersection improvements to accommodate current and future traffic demands. Additional goals of the proposed project are to provide bicycle and pedestrian facilities across the bridge and associated modifications to the adjacent Class 1 trail (the Bob Jones Trail), with the option to include a north-south extension of that trail under Prado Road.

The existing bridge is a three-span, reinforced concrete, "T" Beam Bridge, built in 1957, which spans San Luis Obispo Creek. The bridge is approximately 123 feet long by 26.5 feet wide and is located approximately 180 feet west of the intersection of Prado Road and South Higuera Street in the City of San Luis Obispo. The City proposes to widen Prado Bridge on both sides, increasing the total bridge width from 26.5 feet to 114 feet. Replacing the existing bridge with a new simple span precast concrete I girder bridge is the recommended preferred alternative.

Construction work will be scheduled to provide one lane of traffic in each direction during peak travel times and on weekends. During non-peak hours, or during night work, Prado Road may be temporarily closed to facilitate work performed at abutments, placement of the precast girders, and relocation of utilities. Notice will be provided to adjacent businesses during periods of full closure. Effort will be made to minimize the impact to bicycle and pedestrian traffic during construction; however, the Bob Jones bike path will be impacted during the resetting of the bicycle and pedestrian bridge over San Luis Obispo Creek.

There are several utilities at the site, including overhead electrical, telephone, and cable television lines, as well as a gravity sewer, water, recycled water, and gas lines that are supported by the bridge deck. The gravity sewer line may need to be temporarily shut-off for very short durations and during non-peak use, but otherwise will need to remain in operation throughout construction activities. As a gravity sewer system in a built environment and near the recipient Water Reclamation Facility (a few hundred feet to the west), the horizontal location of the sewer line may be altered slightly to be aligned between bridge superstructure support girders; however, the vertical profile cannot be altered. The existing water, recycled water, and gas lines will be relocated in the new bridge deck or supported by the new deck. The overhead electrical, telephone and cable television lines will be permanently relocated. These facilities could be relocated to conduits placed in the bridge concrete barrier rail.

A hydraulics analysis of San Luis Obispo Creek was completed by the City using the U.S. Army Corps of Engineer's updated Hydrologic Engineering Center River Analysis System (HEC-RAS) model. The existing gravity sewer line effectively constricts the flow of water through the bridge and the bridge is under pressure flow. The project will increase the channel opening and lower the water surface elevation for the 50- and 100-year discharges compared to the existing condition. Rock slope protection will also be placed in the creek to protect the roadway embankment fills.

The proposed bridge construction and widening will require permanent right-of-way acquisition on the south side of Prado Road and temporary construction easements on all quadrants. Based on recorded right-of-way information available from the City, it is anticipated that existing dedications and easements will be required to accommodate the permanent proposed improvements and construction activities on the north side of Prado Road.

Right of way acquisition is expected to be required south of Prado Road, on the west side of the creek, along the frontage of Assessor's Parcel Number 053-051-033. Preliminary review shows that it may be possible to limit the necessary right-of-way to a landscaped frontage of that property. The City owns the parcel on the southeast side of the creek, and it is expected that nearby City-owned parcels (west of the project along Prado Road) could provide staging areas for construction operations.

2.3.1 Construction Activities

The exact means and methods of the construction activities are to be determined by the construction Contractor. The following is only a concept for how the construction of the project may proceed that confirms constructability of the project. The construction of the bridge may occur in two or three stages. The first stage could include construction of the southern portion of the bridge widening and bike path while traffic remains on the existing bridge. The second stage could be the construction of the widening to the north. The third stage would move traffic to the newly constructed southern portion of the bridge and the gravity sewer line to the newly widened northern portion. Then, demolition of the existing bridge and construction of the northern portion of the new bridge and bike path could take place. The Contractor may elect to support the existing sewer main with falsework and eliminate one of the stages of construction.

2.3.1.1 CLEARING AND GRUBBING

Remove portions of trees, bushes, and landscaping in conflict with construction access and activities. The work will be within the approved project limits of disturbance.

2.3.1.2 CREEK FLOW AND GROUNDWATER HANDLING

San Luis Obispo Creek is likely to have some water flowing through the channel during construction. Therefore, it is likely that a diversion of the water will be required to allow construction labor and equipment forces to do the necessary work. Channel flow may be diverted through the use of a coffer dam or other such means. Two clean gravel coffer dams would be constructed, one upstream and one downstream of the project site with a diversion pipe connecting each coffer dam through the site. The diversion pipe would intercept the water upstream and release the water downstream of the construction activities, or the water can be pumped from the upstream side of the work to the downstream side of the creek . During the dewatering process, turbid water would be pumped to sediment control basins (baker tanks) and then released as clean flow into the downstream area.

2.3.1.3 EXCAVATION

Excavation of the creek banks at Prado Road will be required to accommodate the new concrete abutments and any associated retaining walls. The existing abutments could serve as temporary shoring for the construction of the new abutments. Any excess material will be hauled off-site, as necessary.

2.3.1.4 PILE INSTALLATION

The new bridge abutments are to be supported on cast-in-drilled-hole (CIDH) piles. Holes for the piles will be drilled, soil will be removed and hauled off-site, a reinforcing steel cage will be placed in the hole, and the hole will be filled with concrete. When the CIDH piles are installed for the abutments, the steel piles for the adjacent soldier pile retaining walls will also be installed. The steel piles will be placed in drilled holes and the excess material will be hauled off-site.

2.3.1.5 ABUTMENT, RETAINING WALLS, AND BIKE PATH

Once the CIDH piles and soldier piles are in place, the abutments will be formed, reinforcing steel will be placed, and concrete placed. The solider pile wall will be constructed with timber or concrete lagging and tie backs, if necessary. Concrete facing of the lagging is anticipated to provide an aesthetically acceptable finish. After the abutment and solider pile walls are constructed, concrete cut-off walls and portions of the bike path that extend within the flow limits will be placed and paved with concrete.

2.3.1.6 ROCK SLOPE PROTECTION

Rock slope protection is anticipated to be placed in the creek channel at the ends of the retaining wall limits and adjacent to the pathway under the bridge. The channel bed will be excavated to create a toe for the rock slope protection, filter fabric will be placed in the excavated areas and along creek banks, and rocks will be placed in a stacked fashion. Soil will be placed in the voids of the rock slope protection. The rock slope protection will be planted with willow cuttings.

2.3.1.7 PRE-CAST CONCRETE GIRDERS

The bridge superstructure will consist of precast concrete I girders. Precast girders are typically cast off-site and delivered to the construction site. Girders are lifted into place by cranes; given the girder lengths and size, two cranes are anticipated to be needed for this operation.

2.3.1.8 EXISTING BRIDGE REMOVAL

The existing concrete bridge will be removed at the beginning of the second stage of construction. The bridge will be removed from Prado Road with debris collection and disposal separated from active water flows.

2.3.1.9 BOB JONES BIKE PATH RELOCATION

The existing Bob Jones bike path bridge will be slightly rotated at the westerly abutment to shift the eastern end southward and better accommodate the proposed southerly sidewalk connection to the trail. The rotation at the easterly end will require a new CIDH pile to be placed at the east abutment and will require the existing abutment to be widened. Minor modifications will be needed at the western abutment. It is anticipated that a crane will temporarily support and/or relocate the existing prefabricated bridge and replace the bridge once the improvements to the existing abutments are completed.

2.3.1.10 ROADWAY IMPROVEMENTS AND UTILITY RELOCATION

Traffic handling will be provided by the Contractor to ensure public and worker safety during construction. As previously noted, construction could occur in two stages with traffic using the existing bridge in the initial stage while construction of the widened section of Prado Road to the south is underway. After the southerly widening is accomplished, traffic could be shifted to the southern portion of the corridor and construction could continue on the northern portion. As each stage of construction is completed, the roadway improvements and utility relocations will follow. Curb, gutter, sidewalk and storm drainage facilities will be installed. Prado Road will be reconstructed with new Class 2 Aggregate Base and Hot Mix Asphalt. Utilities will be relocated to their final locations as feasible. It is likely that utility service may have short term interruptions during construction.

2.3.1.11 CONSTRUCTION SEQUENCE/SCHEDULE AND TIMING

Construction is estimated to begin in 2021/2022 and is anticipated to take approximately 18-24 months to complete.

2.4 Existing Conditions

Prado Road Bridge is located in an urban area within the City of San Luis Obispo and is bordered to the north and south by the San Luis Obispo Creek corridor, and to the east and west by commercial and low-density development. The project area or Biological Study Area (BSA) is \12.61 acres in size and includes the section of roadway along Prado Road, between South Higuera Street and Elks Lane and areas beyond the City ROW, including the San Luis Obispo Creek channel and a portion of the Bob Jones Bike Path. Elevation within the BSA ranges from approximately 120-140 feet (37 to 43 meters) above mean sea level. In San Luis Obispo, the average annual high temperature is approximately 70º Fahrenheit (ºF), and average annual low temperature is 47ºF. Average annual precipitation for the region is approximately 22 inches (WRCC 2018). Prado Road Bridge crosses San Luis Obispo Creek, an intermittent creek that flows through the city of San Luis Obispo and empties into the Pacific Ocean just west of Avila Beach, about 6 miles south of the Prado Road Bridge. Soils in the project area are Salinas silty clay loam (0 to 2 percent slopes) located on alluvial plains, fans, and terraces not subject to current accretions. They are well drained with slow to medium runoff and moderately slow permeability (NRCS 2016).

2.5 Jurisdictional Areas to be Impacted by Habitat Type

Non-jurisdictional areas within the BSA include ruderal and landscaped plant communities as well as developed areas that include paved roads, pedestrian paths, driveways or parking areas, and other non-vegetated areas. Ruderal habitat occurs in areas that are regularly disturbed by human activities and are dominated by non-native species such as black mustard *(Brassica nigra*), red-stemmed filaree (*Erodium cicutarium*), sweet fennel (*Foeniculum vulgare*), poison hemlock (*Conium maculatum*), and non-native grasses are the dominant species. Vegetative cover is generally low due to disturbance and there is a high percentage of bare soil. Landscaped areas include planted trees and shrubs associated with parking lots, open areas adjacent to buildings, and other areas where native or ornamental trees and shrubs have been planted along roadsides to act as noise or visual barriers. Jurisdictional areas include the arroyo willow thicket plant community, described below, areas where the arroyo thicket extends above top of bank, ruderal areas below top of bank, and the stream channel (Figure 3).

2.5.1 Arroyo Willow Thicket

San Luis Obispo Creek supports an arroyo willow thicket plant community, as described by Sawyer et al. (2009), or Central Coast arroyo willow riparian forest, as described by Holland (1986), and is considered a natural community of concern by CDFW (CDFW CA Code 61.205.00; CDFW 2010). This habitat type can be found throughout most of California along stream banks, benches, slope seeps, and stringers along drainages. The dominant canopy cover throughout the site is arroyo willow (*Salix lasiolepis*), growing as shrubs and trees. It forms a dense stand with other native species such as red willow (*Salix laevigata*), western sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia*), California walnut (*Juglans californica*, likely a hybrid of the native species with the more common English walnut *J. regina*), mugwort (*Artemisia douglasiana*), and California blackberry (*Rubus ursinus*). Riparian scrub and forest communities provide excellent habitat for bird species because the density and complexity of the vegetation layers offer plentiful foraging and nesting opportunities. They may also provide shading for aquatic species during conditions when water is present. Arroyo willow thicket is present on both sides of San Luis Obispo Creek and forms a dense canopy that overhangs the creek channel (Figure 3).

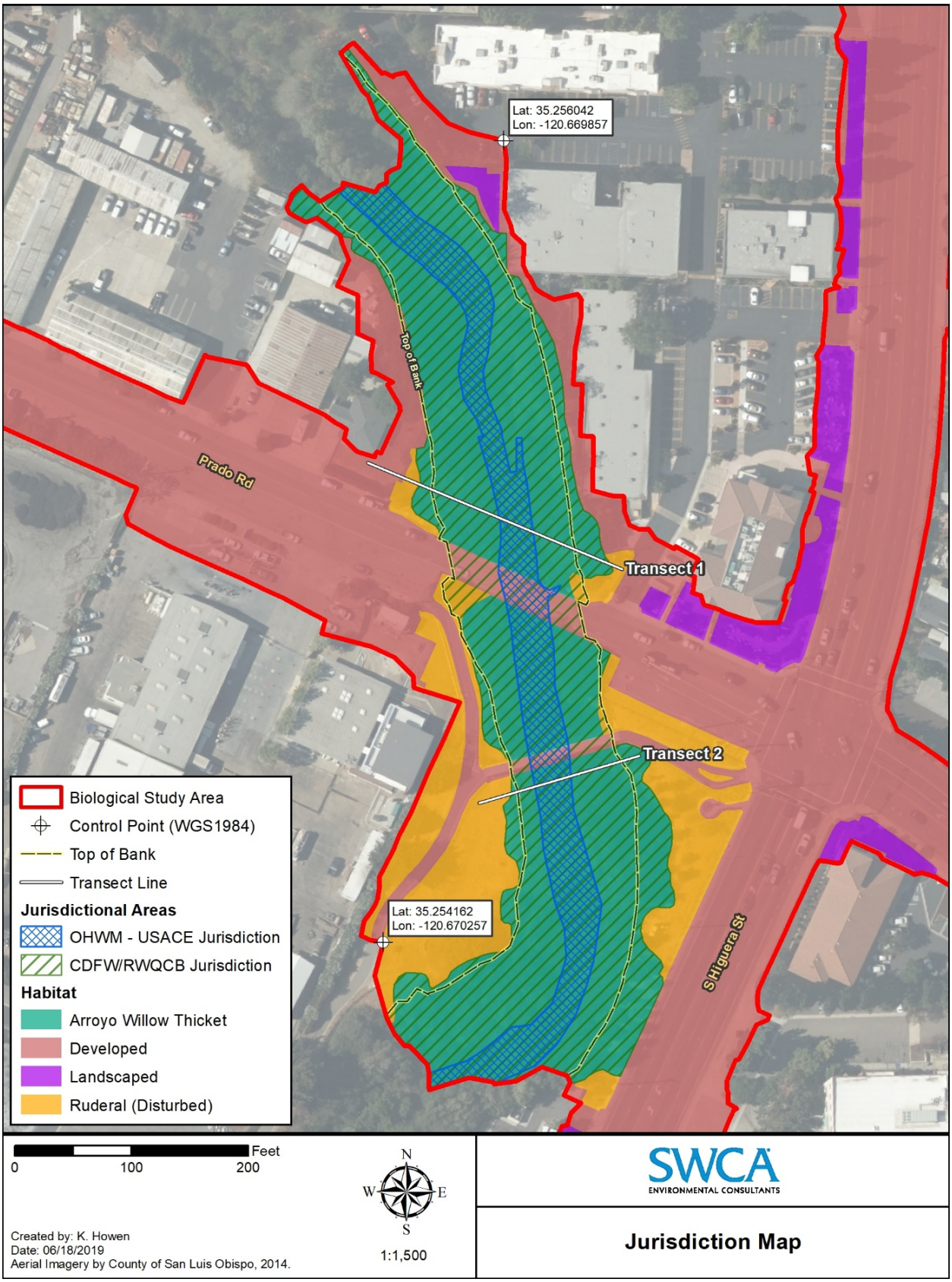

Figure 3. Plant Communities and Jurisdictional Areas Map

2.5.2 South-Central California Coast Steelhead Critical Habitat

San Luis Obispo Creek largely unvegetated beneath the canopy of the Arroyo willow thicket within the BSA and supports critical habitat for the federally listed threatened South-Central California Coast steelhead Distinct Population Segment (DPS). The South-Central California Coast steelhead DPS extends from Monterey to San Luis Obispo Counties and includes streams known to support spawning populations of steelhead. San Luis Obispo Creek is within the South-Central California Coast steelhead DPS Hydrologic Sub-area 331024. In 2008, Hayes et al. issued the assessment that San Luis Obispo Creek's steelhead population was 37,000 fish in the lower reaches of the creek. San Luis Obispo Creek is likely providing a disproportionate amount of suitable steelhead rearing habitat in the county, and thus are potentially high-priority areas for protection and habitat enhancement (Stillwater 2014).

The 84-square-mile (53,271-acre) San Luis Obispo Creek watershed is surrounded by rugged mountainous terrain that drains in a southwesterly direction. It is characterized by slightly compacted granular clay loam in the upper watershed and fine sandy loam in the lower reaches. San Luis Obispo Creek originates at an elevation of approximately 2,200 feet in the Santa Lucia mountain range near Cuesta Pass (Hallock et.al. 1994). In the 18-mile descent to the Pacific Ocean, San Luis Obispo Creek is joined by the three perennial tributaries of Reservoir, Stenner, and See Canyon Creeks; the four seasonal tributaries of Prefumo, Froom, East Fork, and Davenport Creeks; and several seasonal minor drainages. Effluent from the City of San Luis Obispo wastewater treatment facility contributes significantly to the summer flow.

Following a status review in 2005, a final listing determination was issued on January 5, 2006, for the South-Central California Coast steelhead DPS, and critical habitat was designated within 32 DPS watersheds (NMFS 2005). The primary constituent elements (PCEs) of this critical habitat designation include the following:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development;
2. Freshwater rearing sites with:
    - (i) Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility;
    - (ii) Water quality and forage supporting juvenile development; and
    - (iii) Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
3. Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
4. Estuarine areas free of obstruction and excessive predation with:
    - (i) Water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater;
    - (ii) Natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels; and
    - (iii) Juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

The project area contains PCE 3 and possibly PCE 1-2.

2.5.3 Summary of Jurisdictional Features

A jurisdictional determination was conducted for the project and potential federal and state jurisdictional areas were identified within the proposed project area based aerial photos and field observations of the OHWM and top of bank. No federal or state wetlands were identified within the survey area. Other waters of the US and State were identified based on determination of the OHWM, which was determined to be approximately 30 feet wide within the project area. During the permit review process, the resource agencies may elect to conduct a site visit to verify the conditions and extents of the jurisdictional areas identified and will approve or request amendments to the boundaries based on their findings.

Based on the conditions observed in the field, San Luis Obispo Creek is likely subject to USACE, CDFW, and RWQCB jurisdiction. This is due to the presence of a clearly identifiable OHWM, the evidence of a defined bed and bank, connectivity to permanent waters (San Luis Obispo Creek connect directly to the Pacific Ocean), evidence of wetland hydrology, and presence of riparian vegetation. The existing riparian corridor of San Luis Obispo Creek extends to the top-of-bank; therefore, CDFW jurisdiction is mapped to include those areas within the outermost extent of riparian vegetation. RWQCB also asserts jurisdiction over waters of the State, through the Porter Cologne Act. The definition of this state jurisdiction is general, and no formal delineation process is in place at this time, therefore, RWQCB will also commonly utilize the extent of riparian as the extent of their jurisdiction under the Porter Cologne Act. Table 1 quantifies the total area of USACE, CDFW, and RWQCB jurisdictional waters within the BSA, which are depicted in Figure 3.

Table 1. Jurisdictional Areas Present in the BSA

Jurisdictional Feature	Area Present
Clean Water Act (Sections 404/401 applicable)	
Other Waters of the United States (OHWM)	0.6 acre (26,136 square feet)
California Fish and Game Code (Sections 1600–1602 applicable)	
RWQCB/CDFW Jurisdictional Area*	2.3 acre (100,188 square feet)*

*The RWQCB/CDFG jurisdictional area includes the OHWM, top pf bank, and riparian canopy outside top of bank.

Jurisdictional areas that would be filled or otherwise replaced with a structure (permanent loss), or permanently altered from the current condition (degradation of current condition), were considered permanent impacts. Temporary impacts are those where vegetation may be removed or disturbed for construction activities or access or for dewatering/diversion operations, if water were present during construction. Table 2 provides a summary of potential project-related impacts would be subject to environmental permitting by USACE, under Section 404 of the CWA; RWQCB, under Section 401 of the CWA; and CDFW, under Sections 1600–1602 of the CFG Code. Impacts to jurisdictional features within the project area are depicted in Figure 4.

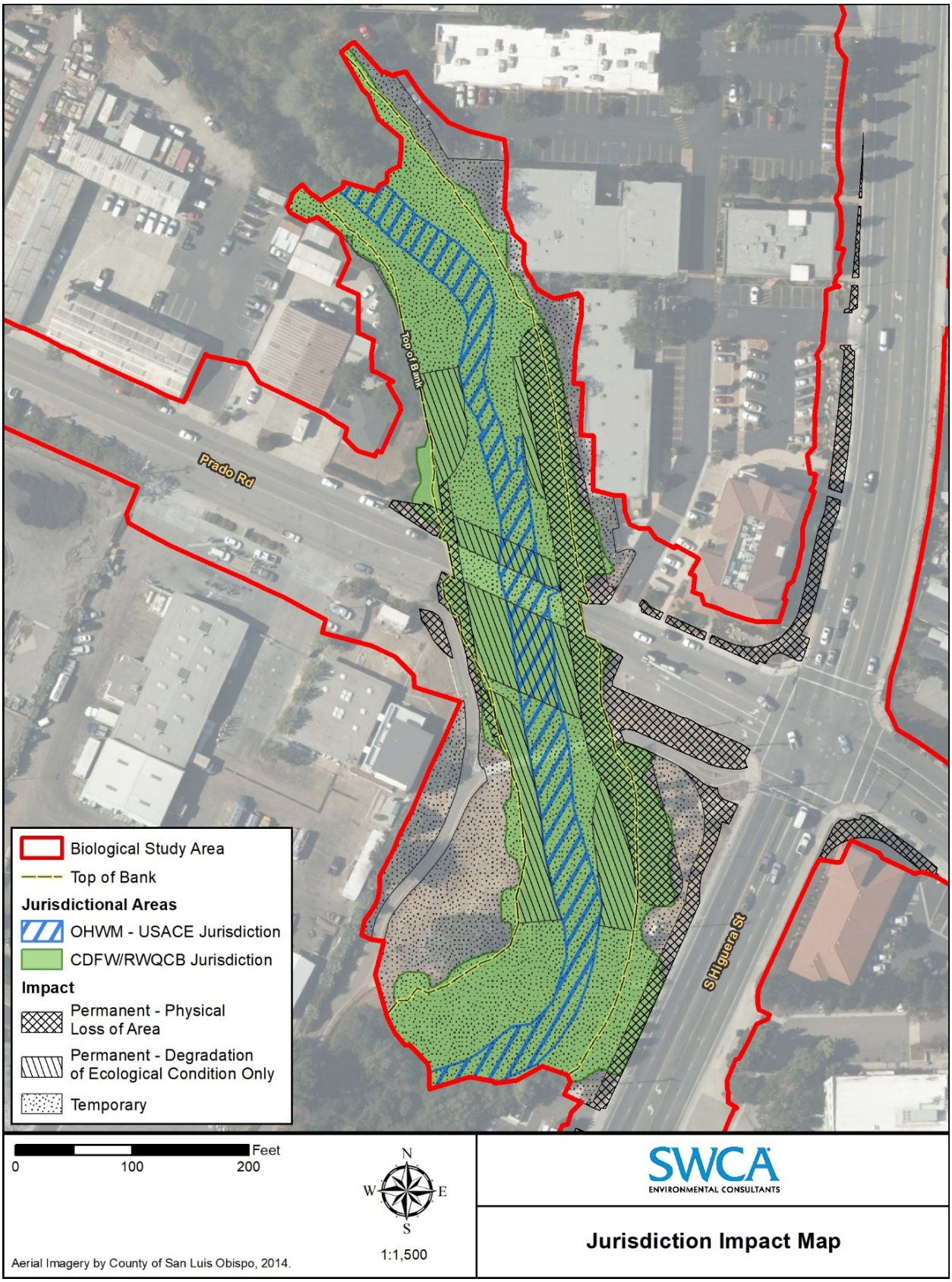

Figure 4. Jurisdictional Impact Map

Table 2. Summary of Impacts to Federal and State Jurisdictional Areas

Aquatic Resource Type	Temporary Impact[1]		Permanent Impact			
			Permanent Loss[2]		Degradation of Ecological Condition[3]	
	Acres	Linear Feet[4]	Acres	Linear Feet[4]	Acres	Linear Feet[4]
Riparian Zone[5]	1.02	860	0.42	860	0.46	860
Stream channel[6]	0.51	860	0.08[7]	135 feet		

[1] Includes only temporary direct impacts to waters of the US/state and does not include upland areas of temporary disturbance which could result in a discharge to waters of the US/state.

[2] Includes direct impacts to waters of the US/state such as placement of bridge support structures, concrete, or other areas where existing vegetation is permanently removed and is no longer able to support ecological conditions.

[3] Includes direct impacts to waters of the US/state such as placement of bridge above the stream channel/banks or RSP where vegetation may be planted or allow to naturally establish such that ecological conditions remain but in a lesser capacity than prior to project implementation.

[4] Linear feet are measured parallel to the streambed.

[5] RWQCB and CDFW jurisdiction extends to the top of bank or outer edge of riparian canopy, beyond top of bank.

[6] Stream channel includes USACE waters of the U.S. and RWQCB/CDFW waters of the state at or below the OHWM that lack one or more of the three wetland parameters.

[7] New concrete bridge abutments may encroach into the OHWM and would be considered permanent loss.

2.6 Functions and Values of Impact Areas

Wetland functions are the physical, chemical, and/or ecological attributes that a wetland naturally provides, while values are those attributes that directly or indirectly benefit humans. Based on observations and the size of the project area, the portion of San Luis Obispo Creek at the Prado Road Bridge crossing provides low physical/hydrological functions (flood control, ground water recharge, and sediment traps), low chemical functions (waste treatment/pollution interception or biogeochemical cycling), and moderate ecological functions (fish and wildlife habitat, endangered species habitat, wildlife migration). Values, such as recreation (bird and wildlife watching), aesthetics, and education, from the San Luis Obispo Creek corridor, especially in the vicinity of the project, would be moderate to high as public access is provided in the form of an existing bike path and pedestrian bridge.

3 GOALS OF THE CONCEPTUAL HABITAT MITIGATION AND MONITORING PLAN

The goal of this Conceptual HMMP is to mitigate for permanent and temporary impacts to jurisdictional areas and restore appropriate native vegetation to disturbed portions of the project site. This Conceptual HMMP addresses the project-related impacts to USACE, CDFW, and RWQCB jurisdictional areas using both on-site and off-site, in-kind, habitat restoration and enhancement. The following compensatory mitigation ratios are proposed for planning purposes only:

- Mitigation for temporary impacts to jurisdictional areas, including streambed and arroyo willow thicket, will consist of onsite restoration within the project area and will be implemented at a 1:1 ratio.
- Mitigation for permanent impacts associated with degradation of ecological condition will be implemented at a 2:1 ratio.

- Mitigation for permanent impacts associated with permanent loss of habitat will be implemented at a 3:1 ratio.

3.1 Mitigation Strategy

USACE Mitigation Rule has established a preferred hierarchy for mitigation that includes, in descending order; 1) mitigation banks, 2) in lieu fee programs, and 3) permittee-responsible mitigation (USACE 2015). Table 3 provides a summary of potential project-related impacts that would be subject to environmental permitting by USACE, under Section 404 of the Clean Water Act; CDFW, under Sections 1600–1602 of the California Fish and Game Code; and RWQCB, under Section 401 of the Clean Water Act. Table 3 also includes proposed mitigation ratios to compensate for permanent and temporary impacts expected from the proposed project. The summary presented below is for initial planning purposes, the actual mitigation requirements will be determined through the permitting process and a final Compensatory Mitigation Plan will need to be approved by the USACE, CDFW, and RWQCB.

Table 3. Summary of Impacts and Proposed Mitigation Acreage Requirements

Jurisdictional Feature	Impact Type	Impact Area (acres)	Mitigation Ratio	Required Mitigation Area (acres)
USACE (CWA Section 404)	Permanent	0.08[1]	3:1	0.24
	Temporary	0.51	1:1	0.51
		Total USACE Mitigation Requirement		0.75
CDFW (Sections 1600)/ RWQCB (CWA 401) Waters of the State2	Permanent Loss	0.42	3:1	1.26
	Permanent Degradation of Ecological Conditions	0.46	2:1	0.92
	Temporary	1.02	1:1	1.02
		Total RWQCB/CDFW Mitigation Requirement		3.20
		Total Mitigation Acreage Required for USACE/CDFW/RWQCB Combined Permanent and Temporary Impacts		***3.95***
		USACE/CDFW/RWQCB Mitigation available on-site in Temporary Impact Areas		***1.53***
		Additional Mitigation Area Required		**2.42**

[1] There would be a minor amount of incursion into the OHWM for replacement of bridge abutments.

[2] These quantities are in addition to USACE CWA Section 404 waters of the U.S., which also qualify/overlap as waters of the State.

3.2 Permanent Impacts Mitigation Areas

The project will result in the permanent loss of habitat associated with the widening of Prado Road Bridge, which will result in a larger footprint compared with current conditions. A 3:1 mitigation ratio is proposed to compensate for permanent loss of jurisdictional areas. Permanent impacts also include areas where rock slope protection would be installed but filled with dirt and planted, which although would support habitat, the areas would be permanently altered from the current condition. A 2:1 mitigation ratio is proposed for project components that result in a degradation of ecological conditions). Since mitigation is not available within the project area, an offsite area has been identified to address mitigation that cannot be done onsite. The proposed mitigation site is within City property adjacent to San Luis Obispo Creek approximately 2 miles south of the Prado Road Bridge (Figure 5).

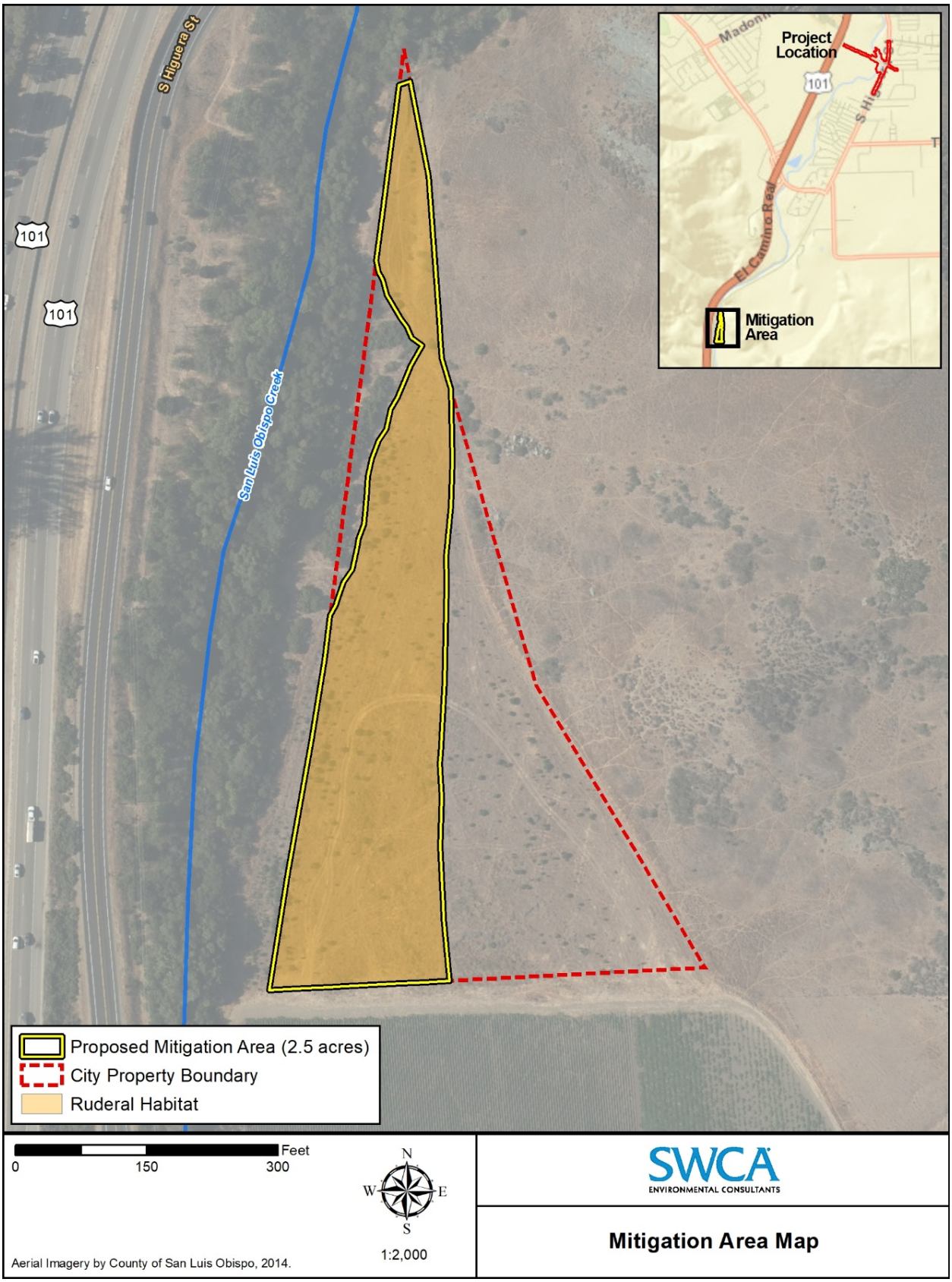

Figure 5. Proposed Mitigation Area

The property is approximately 4 acres within the floodplain of San Luis Obispo Creek and was formerly used for agriculture and currently supports a ruderal plant community. The mitigation proposes to use approximately 2.5 acres of the property to expand the existing riparian plant community associated with the creek by removing and controlling non-native and invasive plant species and replacing them with riparian trees and shrubs such as willows, western sycamore, elderberry, etc. and understory species such as California blackberry, mugwort, and others, as appropriate.

3.3 Temporary Impacts Mitigation Areas

For temporarily impacted areas, such as stream diversion/dewatering and vegetation removal for construction equipment and personnel access, the project will be required to stabilize and revegetate bank slopes and adjacent uplands and the compensatory mitigation strategy will be on-site and in-kind (i.e., essentially the same species, functions, and values as the habitats to be impacted). Temporary impacts to jurisdictional areas on the creek banks can be mitigated at a 1:1 ratio by restoring the topography and vegetation in the temporarily impacted areas. Temporary impact restoration activities should focus on re-contouring the disturbed areas, stabilizing banks (using placing geotextiles, erosion control blankets or other suitable methods or materials), and revegetation by applying an appropriate seed mix and supplemental planting container stock or cuttings, as needed. Temporary impacts within the creek channel itself will likely restore naturally.

3.4 Target Functions and Values

The intent of the mitigation described in this Conceptual HMMP is to restore and enhance the diverse and valuable biological and hydrologic resources within the project site. The project should restore the temporarily disturbed areas to the same or better natural conditions that were present prior to disturbance. A significant decrease in functions and values is not expected because loss of vegetation will be minimized, and implementation of bank stabilization measures and restoration of temporary disturbed areas will ensure there are no long-term effects to San Luis Obispo Creek within and downstream of the project site.

With regard to the offsite mitigation area, the intent of the mitigation will be to replace what is currently ruderal habitat within the floodplain of San Luis Obispo Creek with riparian habitat that is compatible with the habitat present adjacent to the mitigation site, which is also similar to the arroyo willow habitat that would be permanently affected as a result of the bridge expansion project. By replacing an herbaceous plant community with a tree/shrub dominated community, the mitigation is expected to improve the physical/hydrological functions (flood control, ground water recharge, and sediment traps), chemical functions (waste treatment/pollution interception or biogeochemical cycling), and ecological functions (fish and wildlife habitat, endangered species habitat, wildlife migration) within the mitigation site. This approach would also result in an improvement in ecological functions in the riparian and creed habitat adjacent to the site by increasing the buffer area for the san Luis Obispo Creek and it’s associated riparian habitat. It is expected the proposed mitigation may also result in an increase in values, such as recreation (bird and wildlife watching), aesthetics, and education, for the San Luis Obispo Creek corridor, although that may be dependent on the availability of public access.

3.5 Time Lapse between Impacts and Expected Compensatory Mitigation Success

Implementation of the Final HMMP could begin upon completion of construction activities within temporary impact areas. Revegetation ideally would occur in the fall and early winter, when the plant

materials have the greatest chance of becoming established. The standard 5-year monitoring period is proposed for the project, with mitigation success anticipated to occur within the 5-year timeframe. Table 4 provides a conceptual schedule for mitigation and monitoring.

Table 4. Conceptual Mitigation and Monitoring Schedule

YEAR 1	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Implementation Tasks												
Construction Monitoring						X	X	X	X	X		
Prepare Planting Areas										X		
Install and Water Plantings											X	
Site/Revegetation Monitoring										X	X	X
Mitigation Implementation Report					X							
YEAR 2	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
First Year Tasks												
Weeding/Maintenance	X		X	X		X		X			X	
General Site Monitoring			X			X				X		X
Biological Data Collection						X						
Year 1 Annual Report					X							
YEAR 3	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Second Year Tasks												
Weeding/Maintenance		X		X		X		X			X	
General Site Monitoring			X			X				X		X
Biological Data Collection						X						
Year 2 Annual Report					X							
YEAR 4	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Third Year Tasks												
Weeding/Maintenance		X		X		X		X		X		
General Site Monitoring			X					X				X
Biological Data Collection						X						
Year 3 Annual Report												X
YEAR 5	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Fourth Year Tasks												
General Site Monitoring				X								X
Biological Data Collection						X						
Year 4 Annual Report					X							
YEAR 6	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Fifth Year Tasks												
General Site Monitoring						X						
Biological Data Collection						X						
Year 5 Annual Report					X							
Final Site Monitoring											X	
Completion Report												X

*Schedule subject to change if date of implementation is delayed or permit conditions dictate otherwise.

4 MITIGATION AND RESTORATION IMPLEMENTATION PLAN

Implementation of the restoration and mitigation activities are typically conducted or overseen by an approved restoration specialist. The restoration specialist oversees all site preparation, invasive weed removal, seeding, and planting installation, and ensures conformity with the final HMMP. Restoration and enhancement activities commence upon completion of grading and construction, and prior to the onset of the rainy season. Preferably, all plant materials used in the project site are collected locally, from within or close to the project site. Sources of native plant material may also be used from within the Atascadero Creek watershed, upstream of the project site, if sufficient plant material is not available locally.

4.1 Site Preparation

Site preparation of temporary impact areas should consist of restoring the disturbed areas to original contours where possible. Areas that cannot be returned to original contours can be graded to a hydrologically stable configuration that matches adjacent undisturbed areas. Bare areas can be hydroseeded and erosion control material, such as erosion control blankets, used to stabilize slopes and disturbed upland areas, as appropriate. Container stock or cuttings may be planted after slope stabilization measures are installed, where appropriate. Applied seed mixes may include City, Caltrans, or resource agency-approved species or a mix composed of locally collected native species with different mixes for upland and riparian areas, if required. Seed mix may include native species currently present in the project area and the native habitats adjacent to the offsite mitigation area, such as coyote brush, toyon, coffee berry (*Frangula californica*), mugwort, California blackberry, and creeping wild rye (*Elymus glaucus*). Native grasses not found in the project area, but in nearby areas, may be suitable to add to the upland hydroseed mix, such as purple needlegrass (*Stipa pulchra*) and small fescue (*Festuca macrostachya*).

4.2 Invasive Species Removal

Prior to planting in temporary impact mitigation areas, it is recommended that treatment to remove invasive weeds and invasive species seed banks be implemented, such as a grow-and-kill cycle. This, or other suitable preparatory action, should be completed prior to planting efforts. Grow-and-kill cycle details are described below, although other methods may be employed.

- All areas to be planted are watered repeatedly to stimulate germination of existing weed seeds.
- Sprouted weeds may be sprayed with an approved herbicide, covered with black plastic for a period of at least 4 weeks, or removed by hand to conclude at least one grow-and-kill cycle prior to planting on the site.
- Herbicide use should be minimized, wherever feasible, and restricted to application of the glyphosate-based herbicide Aquamaster within 60 feet of the stream bed, and above the OHWM. All herbicide applications are performed by an individual in possession of a Qualified Applicators License and with experience managing invasive weed species in sensitive habitats. Any herbicide applications must be done in a manner that protects native aquatic species.
- Other mechanical means of removal (in addition to covering with black plastic or hand removal) using mowers or other equipment may also be employed; however, the equipment should be staged and used in a way that avoids further impact to the creek channel.

Invasive species removal should be conducted prior to planting for all mitigation areas (i.e., revegetation for temporary impact or enhancement areas). Invasive trees and shrubs should be removed using mechanical methods, such as chain saws and hand tools, with application of an approved herbicide (e.g., glyphosate-based herbicide Aquamaster) used as a follow-up control method (i.e., to control resprouting) or to minimize disturbance to native vegetation or stream banks, as needed. Planting should occur following approval of invasive species removal efforts by the restoration specialist.

4.3 Use of Container Stock

Container stock may be used to supplement hydroseeding in the temporary impact area and in the permanent impact mitigation area, with native trees, such as western sycamore and coast live oak, planted to mitigate for trees removed or affected by project construction. The project should utilize native riparian tree and understory species that currently occur in the BSA or in the San Luis Obispo Creek corridor in the vicinity of the mitigation area. Such species include but are not limited to western sycamore, coast live oak, black elderberry, California blackberry, and others. Planting standards are provided in Section 4.5 below. The restoration specialist should oversee the container stock installation.

4.4 Cuttings

Willow cuttings, such as arroyo willow and red willow, are often used in restoration of riparian areas. Willows are a fast-growing species that can form dense stands that impede water flow, and it is likely they will readily resprout in the areas temporarily impacted by construction. Therefore, it is recommended that willow cuttings only be used in temporarily impacted areas if there is insufficient re-growth or in areas where erosion may be a concern and other plantings are inappropriate. Cottonwood is another species that can be planted as cuttings and is present in the project area. Cottonwood cuttings could be incorporated into the planting area to increase diversity. Other species that can be planted from cuttings include mulefat and California blackberry, although these species may be more successful if grown in containers rather than direct planting of cuttings.

If willow or cottonwood cuttings are used in the mitigation sites, they may be salvaged from trees trimmed to clear space for the new bridge. Salvage cuttings should be properly treated, stored, and installed in open areas of the temporary disturbance zone as soon as possible—preferably within the same day they are trimmed. Additional cuttings may be obtained from healthy populations of adjacent unimpacted trees in or near the BSA, although no more than 20% of material from individual plants should be removed as cuttings.

The restoration specialist should oversee cutting, collecting, and planting efforts in the field. If it is determined that cuttings from the riparian corridor will not adequately supply the replanting effort, container stock may be utilized.

4.5 Planting Methodology

Temporarily impacted areas could be restored by re-contouring the disturbed slopes and revegetated with container stock and cuttings installed above the OHWMs. Upper bank areas could be stabilized with a riparian/grassland hydroseed mix per the project Stormwater Pollution Prevention Plan and planted with riparian shrubs and trees.

Permanent impacts to jurisdictional areas could be compensated by enhancing riparian vegetation, and by removing debris and invasive weed species from within the permanent impact (i.e., enhancement) mitigation area. The permanent impact mitigation area includes those areas outside the impact area that

currently support riparian or upland vegetation within and adjacent to the project boundaries. Removal of invasive species, such as black locust, would provide opportunities for planting native trees and shrubs to enhance the existing native plant communities. Plantings could consist of container stock and installed following removal of invasive weed species.

4.5.1 Soil Stabilization and Seeding

Soil stabilization methods following construction and recontouring are typically described in the Storm Water Pollution and Prevention Plan or Erosion Control Plan for the project. In general, once erosion control measures are in place, all bare soil located above the OHWM may be seeded with an approved native riparian/grassland mix to ensure establishment of native vegetative growth and for long-term soil stabilization purposes.

4.5.2 Rock Slope Protection

Soil-filled RSP will be incorporated within the permanent impact area. Cuttings (see above) may be installed between the rocks to increase function and values at the bridge site and to provide habitat for wildlife (e.g., nesting birds, steelhead, etc.), if necessary and if this method would not affect the integrity of the bridge and its support structure. The cuttings could be installed as discussed in the Caltrans *Erosion Control Toolbox* (Caltrans 2016).

4.5.3 Container Stock

Container stock, if used, could be installed by hand and using the following general methods:

- Container stock are be planted at 5-foot centers in unvegetated areas and in gaps within vegetated areas.
- Prior to planting container stock, an area 2 feet in diameter at each proposed planting location is manually cleared of non-native species.
- All planting holes are dug to equal the depth and 1.5 times the width of the rootball or rhizome.
- Plants are removed from the container, placed in the center of the pit, and backfilled with native material. Rootballs or rhizomes should not be disturbed when planting.
- After the soil has been well firmed around the rootball and watered, the crown of the rootball will be at the surrounding finish grade of the slopes.

4.5.4 Cuttings

Cuttings may be installed by hand and subject to the following conditions:

- Cuttings are typically planted within 24 hours after harvesting, and may be soaked in water for a minimum of 8 hours before planting.
- Cuttings are be planted at 8-foot centers.
- Prior to planting cuttings, an area 2 feet in diameter at each proposed plant site is manually cleared of any weed growth.
- Cuttings are placed in deep narrow holes made with a digging bar. At least 50% of the cutting should be buried in the ground. Each planting hole is be filled with water and covered with soil following cutting placement.

4.6 As-Built Conditions

An as-built Mitigation Implementation Plan should be prepared and submitted to interested agencies prior to the start of the 5-year monitoring period. The purpose of the as-built plan is to illustrate the final construction of the mitigation and restoration areas, show planting locations, and detail any final modifications not included in the final HMMP.

5 MAINTENANCE PLAN

Maintenance during plant establishment is necessary to ensure success of the mitigation effort. The conceptual 5-year maintenance period begins immediately upon completion of the mitigation planting. At the end of the maintenance period, the appropriate regulatory resource agencies review the monitoring reports and evaluate whether the performance standards have been met. The maintenance program ensures that watering of installed plants, weed control, debris removal, vandalism, replanting, plant protection, and site protection are performed adequately.

5.1 Watering

Water will be supplied to the plantings during the planting establishment period per the schedule provided in Section 7 of this report or until the restoration biologist determines that the plantings are self-sustaining. Supplemental water will be supplied during the dry season. At the discretion of the restoration biologist, the irrigation system may be turned off during the rainy season. All supplemental watering will be performed in a manner that ensures deep penetration of water to the soil around the plant rootball (not on plant foliage).

5.2 Weed Control and Herbicide Use

Weed species may become established within restoration areas, especially in response to supplemental water use. Weed control will be necessary to minimize competition from invasive plants during the establishment period and throughout the life of the maintenance program. Weeds will be removed by hand and, if necessary, via herbicide applications. Weeding activities will be performed quarterly until the restoration biologist determines that the plantings are self-sustaining. Weeds should be killed or removed before they grow higher than the adjacent native plantings and prior to seed set. Invasive plant species that may become established and should be removed include but are not limited to French broom (*Genista monspessulana*), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), milk thistle (*Silybum marianum*), star thistle (*Centaurea solstitialis*), poison hemlock (*Conium maculatum*), fennel (*Foeniculum vulgare*) and others. In particular, the offsite mitigation area, which is currently a ruderal (i.e., weed dominated) plant community, would likely require a more intensive weed control effort prior to implementation of restoration.

5.3 Trash Removal

Any incidental trash will be removed from the mitigation area, as necessary, during the regularly scheduled monitoring visits

5.4 Vandalism

Vandalism of the site is not expected, although the project site is open to public access. Any vandalism of restoration plantings that compromise success goals may be rectified with replacement plantings.

5.5 Remedial Planting

Remedial planting may be performed as necessary to remain in compliance with the targeted success goals/criteria. Any such plantings will be performed per the Final HMMP planting methods and requirements

5.6 Fertilizing

The use of fertilizers is not anticipated.

6 MONITORING PLAN

In order to accomplish project goals and objectives, the monitoring program provides qualitative data to be used to determine the success of the mitigation area and to identify the need for subsequent mitigation.

The project restoration specialist collects and evaluates data indicating the relationship between actual site conditions and the performance criteria. Field monitoring and sampling is followed by preparation of brief reports that include photo documentation and evaluation of the success of the mitigation effort based on whether or not the annual performance goals for that year were met.

6.1 Monitoring Schedule

The monitoring program would consist of general monitoring visits and annual biological data collection visits (refer to Table 4). General monitoring visits can be conducted concurrently with maintenance visits. The focus of general monitoring visits is to assess the plantings need for supplemental water or other maintenance-related issues. The focus of the biological monitoring visits is to collect quantitative data that will provide an assessment of the site's relative vegetative cover of freshwater marsh and willow riparian scrub vegetation.

At a minimum, the restoration specialist monitors the site quarterly during the first 3 years after planting and semi-annually for the fourth and fifth years of the monitoring program (refer to Table 4). After large storm events that inundate the site, the restoration specialist inspects the site for damage. It is the responsibility of the restoration specialist to ensure that the project is maintained as necessary during the monitoring period.

Permanent photo points may be established throughout the mitigation site to assist in tracking the success of the mitigation program. Permanent photo points may also be established during the preparation of the as-built planting plan, and ground view photos taken during each monitoring year from the same vantage point.

6.2 Performance Goals

Table 5 lists the annual performance standards for the mitigation areas. The mitigation areas should be monitored as necessary until the final success criteria are met. In addition to the performance standards below, the restoration and mitigation areas may have no more than 5% cover of non-native invasive species, as defined by the California Invasive Species Council. If the program is determined to be unsuccessful, the restoration specialist may recommend appropriate contingency measures. The mitigation sites are not considered successful until the involved regulatory agencies have provided written verification that the final success criteria have been met. It is anticipated that by the third year, the mitigation sites will be well established and functioning such that it should be self-sustaining for the long term. Vegetation should survive for 2 years without supplemental watering.

Table 5. Performance Standards and Final Success Criteria

Mitigation Area	Mitigation Area Native Vegetative Cover Goal				
	Year 1	Year 2	Year 3	Year 4	Year 5
Temporary Impact Restoration Area	20%	35%	50%	65%	80%
Permanent Impact (or Enhancement) Mitigation Area	30%	45%	55%	60%	85%

6.3 Other Attributes to be Monitored

In addition to monitoring for successful restoration of plant communities, it is necessary to determine if other biotic as well as physical and hydrological attributes of Atascadero Creek present prior to disturbance are present once restoration is complete to ensure all of the functions of the project site are restored. The California Rapid Assessment Method (CRAM) for wetlands, which is the current standard for monitoring the conditions of wetlands throughout California, utilizes a qualitative method for measuring physical, hydrological, and biotic attributes of riverine systems and may be used to measure the before and after conditions of a project site (California Wetlands Monitoring Workgroup 2009). The CRAM condition scores can be correlated with wetland functions in certain circumstances. For stream restoration, the CRAM score before construction is compared with the CRAM score after restoration to ensure the condition of the site is improved or, at a minimum, there is no degradation as a result of the project. However, there are several methods for qualitatively or quantitatively assessing wetland functions. For this project, qualitative methods may be sufficient to ensure the stream bed and banks are restored to pre-project conditions. Below is a brief description of the attributes and recommended methods of recording presence of biotic, physical, and hydrological attributes during restoration.

Monitoring should be conducted in accordance with the schedule in Table 5 and reported annually. The goal of the restoration is to have the biotic, physical, and hydrological functions of the project site restored to equal or better than conditions present prior to disturbance or as presented in post-construction as-built Mitigation Implementation Plan. It is therefore important to record conditions prior to disturbance and/or identify specific attributes to be replaced in the as-built Mitigation Implementation Plan. The completion report should include a comparison of the before or as-built conditions with those recorded as present during the monitoring period to ensure successful restoration of biotic, physical, and hydrological attributes within the project site.

6.3.1 Biotic Attributes

In addition to cover of vegetation and percent of invasive plant species, measured through the performance standards described in Section 6.2, biotic attributes include sustainability of the vegetation, the biotic structure (i.e., richness of the plant community, number of plant layers), and wildlife use of habitat. The following should be recorded during monitoring:

- Record the presence of native volunteer species during monitoring as an indication the site conditions are suitable for development of self-sustaining natural habitat.
- New non-native species occurrences noted during monitoring must be removed before they produce seed. Monitoring activities will observe and record the presence of such species and determine if action is required.
- All wildlife or wildlife sign observed in and around the mitigation areas will be documented as to species, number, and functional use of habitat (i.e., feeding, nesting, roosting, etc.).

6.3.2 Physical Attributes

Physical attributes include the micro- and macro-topography within a wetland or stream and the different types of physical surfaces or features that can provide habitat for aquatic, wetland, or riparian species. The following should be recorded during monitoring:

- Cobbles, boulders, sediment mounds, plant hummocks, and islands.
- Pools or depressions (in wet or dry channels).
- Undercut banks or slumps.
- Organic debris in the channel or on the floodplain, debris jams, and standing snags.
- Filamentous algae or algal mats.

6.3.3 Hydrological Attributes

Hydrological Attributes include water source, the stability of the channel, and the ability of the water to move into and out of the area in question. The project is not likely to have an effect on or be affected by a water source, other than water will likely be present in the project area during construction. The project includes a water diversion plan, and ensuring restoration of streambed and flow is required once the project is complete.

- Ensuring the main channel geometry is restored shall be achieved by measuring the main channel geometry (e.g., width to depth ratio, sinuosity, etc.) once restoration is complete and comparing it with the post-construction as-built Mitigation Implementation Plan.

6.4 Reporting Requirements

The different regulatory agencies that have discretionary approval over the bridge replacement project have varying reporting requirements associated with the mitigation effort. The reporting requirements for each agency are discussed below.

6.4.1 United States Army Corps of Engineers

Annual reports should be written pursuant to the USACE Mitigation Monitoring Guidelines requirements during the 5-year monitoring period (USACE 2004).

6.4.2 California Department of Fish and Wildlife

CDFW typically requires submittal of annual monitoring reports that must include photo documentation to detail the progression of the revegetation efforts.

6.4.3 Regional Water Quality Control Board

A RWQCB water quality certification typically requires submittal of a project completion report and five annual monitoring reports pertaining to the project.

7 COMPLETION OF COMPENSATORY MITIGATION

7.1 Notification of Completion

The agencies (USACE, CDFW, and RWQCB) are notified in writing upon completion of the monitoring period and attainment of the success criteria. At the end of the monitoring period, the restoration specialist requests agency verification that the final success criteria have been met. The restoration specialist may request agency verification of compliance prior to the end of the monitoring period if the final success criteria have been met at an earlier date.

Following receipt of the final monitoring report, the agencies may request a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation effort is not be considered complete without an on-site inspection by an agency representative or written confirmation that approved success criteria have been achieved.

8 CONTINGENCY MEASURES

8.1 Adaptive Management

The mitigation sites should be self-sustaining (i.e., no maintenance or artificial irrigation) for a period of 2 years to be considered successful. If replanting is determined to be necessary, replanted areas will be monitored and maintained for a period agreeable to the relevant regulatory agencies. If a total site failure is evident, the applicant shall coordinate with the involved regulatory agencies to determine an acceptable solution or what alternative compensatory mitigation will be required. Identification of alternative mitigation sites may be necessary. However, if the site trends indicate that the success criteria will eventually be met but in a longer timeframe than anticipated, maintenance and monitoring will continue until the criteria have been satisfied.

8.2 Long-Term Management

Long-term management of restoration site is the responsibility of the City.

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APPENDIX A

Monitoring and Reporting Guidelines

U.S. Army Corps of Engineers
Mitigation and Monitoring Report Requirements

The required compensatory mitigation monitoring reports shall be a minimum of six pages and a maximum of eight pages. The following information shall be included within the report of the specific pages described below:

Pages 1-2:

1. Project Information

    1. Project Name.
    2. Applicant name, address, and phone number.
    3. Consultant name, address, and phone number (for permit application, if necessary).
    4. Corps permit file number.
    5. Acres of impact and type(s) of habitat impacted (or proposed for impact)
    6. Date project construction commenced (or proposed to begin).
    7. Location of the project and directions to site (including latitude/longitude or UTM coordinates).
    8. Date of the report and the corresponding permit conditions pertaining to the compensatory mitigation.
    9. Amount and information on any required performance bond or surety.

2. Compensatory Mitigation Site Information

    1. Location and directions to the site (including latitude/longitude or UTM coordinates).
    2. Size and type(s) of habitat existing at the site and proposed for restoration, enhancement, and/or creation.
    3. Stated purpose/goals for the compensatory mitigation site.
    4. Date site construction and planting completed.
    5. dates of previous maintenance and monitoring visits.
    6. Name, address, and contact number of responsible agent for the site.
    7. Name, address, and contact number for designer.

3. Brief Summary of Remedial Actions(s) and Maintenance of the Compensatory Mitigation Site

Page 2 or 3:

1. Map of the compensatory mitigation site

    1. 8 ½ Diagram of the site including:

        1. Habitat types (as constructed).
        2. Locations of photographic record stations.
        3. Landmarks
        4. Inset defining location of the site.

Page 3 or 4:

1. List of Corps-approved success criteria.
2. Table of results from the monitoring visits versus performance standards for specified target dates.

Page 4, 5, and/or 6:

1. Photographic record of the site during most recent monitoring visit at record stations (at least four photos on at least one page, no more than two pages).

Page 5, 6, or 7:
1. Summary of field data taken to determine compliance with performance criteria. At least one page, no more than two pages.

Page 6, 7, 8 (if needed):
1. Summary of any significant events that occurred on the site that may affect ultimate compensatory mitigation success.

The completed monitoring reports shall be submitted unbound to the Corps for inclusion into the official case file. Electronic copies of these reports can be submitted in lieu of written reports and may be required in the future.