Old Creek Bridge

05-SLO-1-PM-34.46
0L722/0515000098

Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

May 2018

General Information About This Document

The California Department of Transportation (Caltrans) has prepared this Initial Study with Mitigated Negative Declaration, which examines the potential environmental impacts of the Old Creek Bridge Retrofit or Replacement project on State Route 1, near Cayucos in San Luis Obispo County at post mile 34.46.

The Draft Initial Study was circulated for public review and comment from February 10 to March 14, 2018. A Notice of Intent to Adopt a Mitigated Negative Declaration, as well as an offer to hold a public meeting was included. The Notice of Intent and offer to hold a public meeting was mailed to a list of stakeholders that included both governmental offices and private citizens who live in the project area. The comments received during the circulation period and their responses are provided in Appendix F, Comments and Responses. The project has completed the environmental compliance with circulation of this document. When funding is approved, Caltrans can design and build all or part of the project.

Elsewhere throughout this document, a vertical line in the margin indicates a change made since the draft document circulation. Minor editorial changes and clarifications have not been so indicated.

Hard copies of this document as well as the technical studies are available at:

- Caltrans District Office at 50 Higuera Street San Luis Obispo, California 93401
- San Luis Obispo County Public Library at 995 Palm Street San Luis Obispo, California 93401
- Cayucos Library, 310 B Street Cayucos, CA 93430
- Morro Bay Library, 625 Harbor Street, Morro Bay, CA 93442.

Electronic copies of this document can be accessed at:

- Caltrans District 5 website (www.dot.ca.gov/d5/) under “Projects” in San Luis Obispo County

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attn: Julie McGuigan, Environmental, 50 Higuera Street San Luis Obispo, CA 93401; phone 805-549-3118 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

5-SLO-01-34.46
0L722/0515000098

Caltrans proposes to either widen and retrofit or replace the existing northbound Old Creek Bridge (#49-0070R) crossing Old Creek along State Route 1 near Cayucos in San Luis Obispo County at post mile 34.46

INITIAL STUDY
with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

2/1/18
Date of Approval

Matthew Fowler
Senior Environmental Planner
California Department of Transportation
CEQA Lead Agency

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SCH: 2018021018

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to either widen and retrofit or replace the existing northbound Old Creek Bridge (#49-0070R) crossing Old Creek along State Route 1 (SR 1) near Cayucos in San Luis Obispo County at post mile 34.46.

Determination

Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the project would not have a significant effect on the environment for the following reasons.

The project would have no effect on land use, growth, farmlands/timberlands, local communities, utilities/emergency services, traffic, transportation/pedestrian or bicycle facilities, paleontology, cultural resources, air quality, or invasive species.

In addition, the project would have no significant effect on noise, vibration, hazardous waste or materials, geology, soils, water quality, hydrology, floodplains, storm water runoff, topography; the project would not be particularly vulnerable to seismic activity.

In addition, the project would have no significantly adverse effect on wetlands or other waters, biological resources, or aesthetics because the following mitigation measures would reduce potential effects to less than significant:

- Compensatory mitigation is proposed for impacts to wetlands and other waters at a 1:1 ratio (acreage) for temporary impacts and at a 3:1 ratio (acreage) for permanent impacts to riparian and freshwater marsh vegetation via restoration (reestablishment).

- Restoration plantings would be on-site and in-kind and consist mainly of native riparian species such as arroyo willow and associated understory such as California blackberry, and freshwater marsh emergent vegetation such as cattail. Locally collected plant materials shall be used to the extent practicable.

- Prior to any ground-disturbing activities, Environmentally Sensitive Area fencing shall be installed around jurisdictional waters, coastal zone ESHAs, and the dripline of trees to be protected within project limits. Caltrans-defined Environmentally Sensitive Areas shall be noted on design plans and delineated in the field prior to the start of construction activities.
- If feasible, tree removal shall be scheduled to occur from September 2 to February 14, outside of the typical bird nesting and bat maternity roosting season, to avoid potential impacts to nesting birds or roosting bats.
- If tree removal or other construction activities are proposed to occur within 100 ft of potential habitat during the nesting season (February 15 to September 1), 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.

- If tree removal is required during the bat maternity roosting season (February 15 to September 1), a bat roost survey shall be conducted by a qualified biologist within three (3) days prior to removal. If an active bat roost is found, Caltrans shall coordinate with the California Department of Fish and Wildlife to determine an appropriate buffer based on the habits and needs of the species. Readily visible exclusion zones shall be established in areas where roosts must be avoided using Environmentally Sensitive Area fencing. Work in the buffer area shall be avoided until a qualified biologist has determined that roosting activity has ceased. Active bat maternity roosts shall not be disturbed or destroyed at any time.

- Birds and bats will be excluded from the existing bridge prior to its demolition. Nesting bird exclusion methods may include installation of exclusion netting, removing/knocking down nests before they contain eggs, or other methods approved by CDFW. Installation of exclusion netting shall occur outside of the typical bird nesting and bat maternity roosting season (i.e., implement exclusion methods from September 2 to February 14).

- Because the existing bridge may potentially support roosting bats, if the bridge replacement alternative is selected and does not support features conducive to bat roosting (e.g., crevices, cavities, joints), replacement roost features will be incorporated into the new bridge as mitigation (e.g., add-on panels, add-on collars, capped edge drains, and/or bat houses). The size, materials, and positioning of these features will be agreed upon via collaboration with Caltrans Design and a qualified biologist. Impacts to vegetation would be offset by replacement plantings within the project limits, which will also replace potential roosting habitat. No additional compensatory mitigation is proposed.
- Prior to initiation of stream dewatering, Caltrans shall conduct an informal worker environmental training program for threatened and endangered species and special status species. For threatened and endangered species the training will include a description of steelhead trout, tidewater goby, and California red-legged frogs and their legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating Federal Endangered Species Act and permit conditions. For the special status species the training will include a description of the western pond turtle and two-striped garter snake, their legal/protected status, proximity to the project site, and avoidance/minimization measures to be implemented during the project.

- Prior to construction, a biologist determined qualified by Caltrans shall survey and, if present, capture and relocate any western pond turtles or two-striped garter snakes to suitable habitat downstream of the Area of Potential Impact (API). Observations of

Species of Special Concern (SSC) or other special-status species shall be documented on California Natural Diversity Database (CNDDB) forms and submitted to California Department of Fish and Wildlife (CDFW) upon project completion. If these species or other SSC aquatic species are observed during construction, they will likewise be relocated to suitable habitat outside of the impact area by a qualified biologist.

- Monitoring will occur during construction by a qualified biologist for stream dewatering and all instream work, and disturbance of habitat has been completed for Steelhead trout (Oncorhynchus mykiss irideus), Tidewater Goby (Eucyclogobius newberryi), California Red-legged Frog (Rana draytonii), Western Pond Turtle (*Emys marmorata*) and Two-striped Garter Snake (*Thamnophis hammondii*).
- In-stream work will only occur during the low flow period (June 1-October 31).
- During instream work, a qualified biologist shall be retained with experience in steelhead trout and tidewater goby biology and ecology, aquatic habitats, biological monitoring (including dewatering), and capturing, handling, and relocating fish species. During instream work, the biological monitor(s) shall continuously monitor placement and removal of any dewatering system to capture stranded steelhead trout, tidewater goby and other native fish species and relocate them to suitable habitat as appropriate. The biologist(s) shall capture steelhead trout stranded as a result of dewatering and relocate steelhead trout to suitable instream habitat immediately downstream of the work area, using methods approved by the appropriate regulatory agencies. This may include, but not necessarily will be limited to: seine-netting, dip-netting, electrofishing, and providing aerated water in buckets for transport and ensuring adequate water temperatures during transport. The biologist shall note the number of steelhead trout observed in the affected area, the number of steelhead trout captured and relocated, and the date and time of the collection and relocation.

- During instream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes shall be completely screened with no larger than 3/32-inch (2.38 mm) wire mesh to prevent steelhead trout and other sensitive aquatic species from entering the pump system. Pumped water will be directed through a silt filtration bag and/or into a settling basin allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area. The form and function of all pumps used during the dewatering activities shall be checked weekly, at a minimum, by a qualified biological monitor to ensure a dry work environment and minimize adverse effects to aquatic species and habitats. Upon completion of construction activities, any diversions or barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed shall be minimized to the maximum extent possible; any imported material shall be removed from the streambed upon completion of the project.

- Sound-attenuating devices shall be used during pile driving for steelhead trout (Oncorhynchus mykiss irideus), tidewater goby (Eucyclogobius newberryi) if feasible.

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- The number of access routes, size of staging areas, and the total area of activity shall be limited to the minimum necessary to achieve the project. Environmental sensitive areas shall be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to wetland and riparian habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

- Habitat contours shall be returned to a natural configuration at the end of the project activities.

Visual Measures

- Replanting will be required for all areas where vegetation has been removed as a result of the project.
- Revegetation plants shall include native tree and shrubs as determined by the Caltrans Biologist and Caltrans Landscape Architect.
- Revegetation shall occur at the maximum extent horticulturally viable.
- Planting shall be maintained for one year until plants are fully established.
- Rock slope protection (RSP) that extends more than 10 feet beyond the footprint of the new bridge shall be planted with willows.
- New and replaced guardrail and bridge approach metal posts shall be darkened to visually recede and reduce noticeability. Post darkening shall be determined by the Caltrans Landscape Architect in conjunction with the Caltrans Project Engineer.
- Preserve as much existing vegetation as possible.
- Use prescriptive clearing and grubbing and grading techniques which save as much of the existing vegetation as possible.
- All disturbed construction access roads, staging area, and other temporary uses shall be restored to a natural-looking condition after construction.

5/03/18

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California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is proposing to widen the existing inside and outside shoulders to 5.0' and 11.5', respectively, and upgrade the guardrail on northbound Old Creek Bridge (Br. No. 49-70R) on Route 1 at Postmile (PM) 34.46. The project also proposes to address the seismic deficiencies of the existing bridge by retrofitting the existing structure or replacing the bridge with a new structure.

Caltrans is the Lead Agency under the California Environmental Quality Act.

Regional and System Planning

SR-1 within the project area is part of the Surface Transportation Assistance Act (STAA), Interregional Road System (IRRS). Within the project limits, SR-1, serves as an official Scenic Highway System route. The functional classification for SR-1 is "Expressway and Minor Arterial." Portions of SR 1 are designated as an expressway within the project area. Within the project limits, SR-1 is open to bicyclists.

The project is programmed under the 2018/2019 State Highway Operation and Protection Program (SHOPP) to be built in the fiscal year 2019/2020. The projects construction cost is currently estimated at $6,500,000 and is anticipated to take approximately 24 months to complete.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of this project is to bring the Old Creek Bridge (Br. No. 49-70R) up to current geometric and seismic design standards and to improve bicycle access across the bridge.

1.2.2 Need

Problem, Deficiencies, Justification

The existing bridge rails and shoulders over the Old Creek Bridge are non-standard. The existing inside and outside shoulders area are approximately two feet wide. These non-standard shoulder widths do not allow for bicycle traffic passage over the bridge without the sharing of the traveled lane. Increasing shoulder widths to standard 10 feet wide outside and 5 feet wide inside shoulders would decrease off-tracking vehicle accidents and will facilitate bicycle traffic without necessitating sharing of the traveled lane. Metal 'see-through' style ST Type bridge rails would reduce the possibility of vehicles leaving the roadway from the bridge.

Additionally, structural and preliminary geotechnical investigations have revealed that the existing bridge's foundations are seismically deficient. As such, the existing structure cannot sustain widening without correcting this deficiency of the bridge either by a significant retrofit design or by replacing the structure.

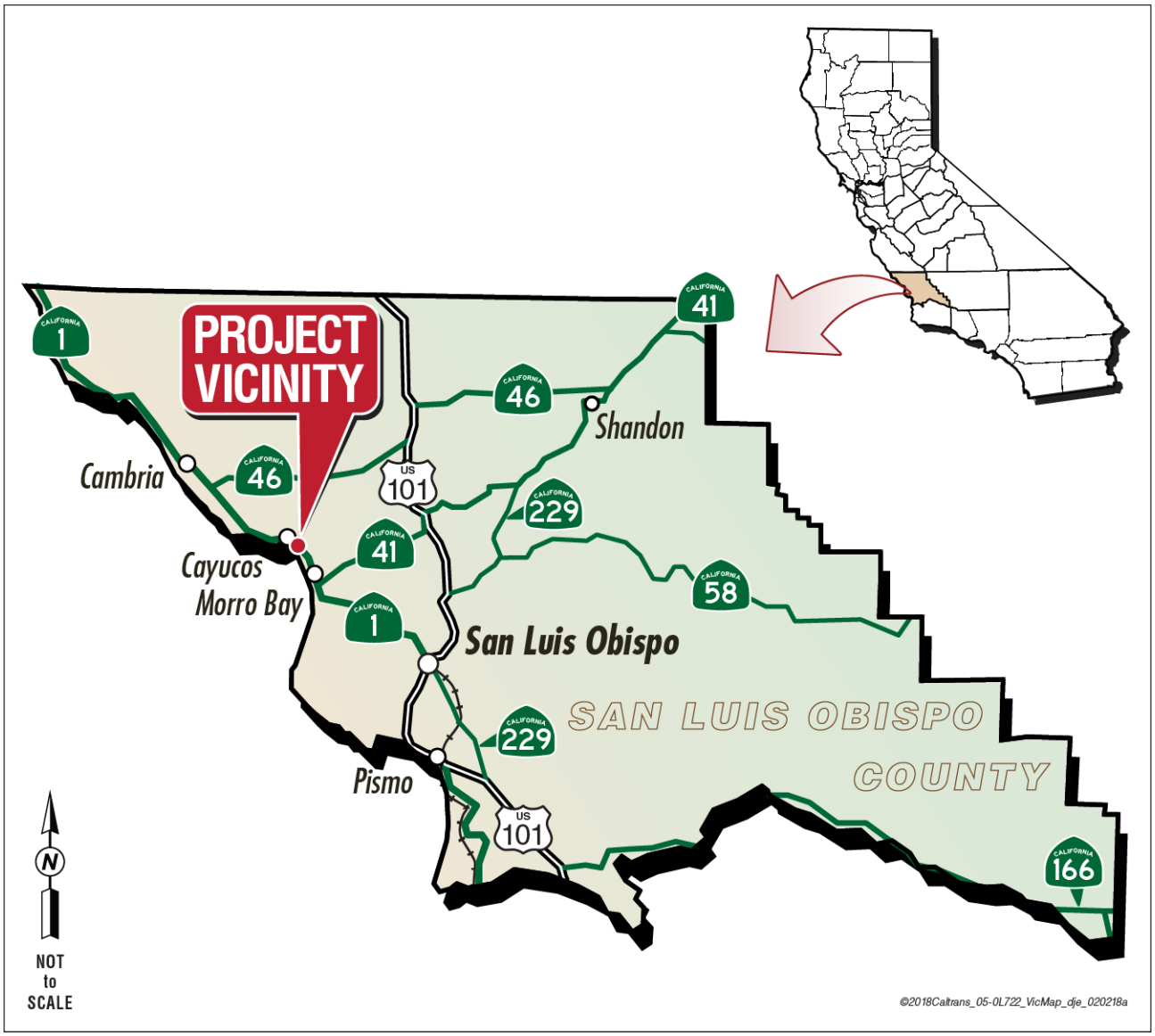


Figure 1-1 Project Vicinity Map

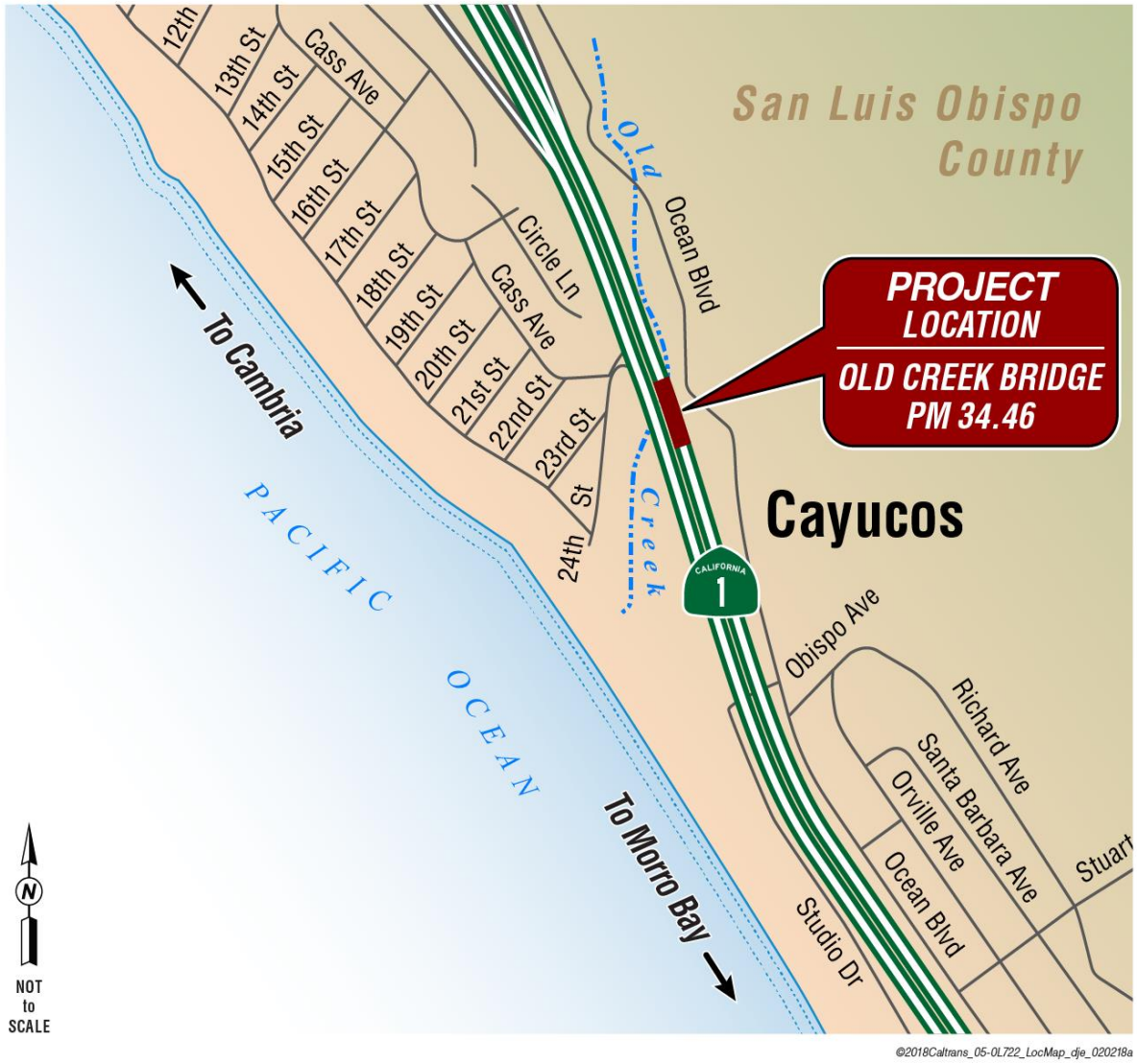


Figure 1-2 Project Location Map

1.3 Project Description

Caltrans proposes to retrofit or replace the existing Old Creek Bridge (Br. No. 49-70R) on SR-1 so that the bridge will be able to accommodate standard bridge rails and multimodal use. The bridge will be brought up to current structural and geometric standards and will include standard bridge rails with bicycle rails and standard shoulders that would accommodate a Class III bicycle route.

1.4 Project Alternatives

There are four alternatives being considered for this project: three build (viable) alternatives and the No-Build Alternative. Preliminary project plans for each of the build alternatives are included in Appendix D.

1.4.1 Build Alternatives

Common Design Features of the Build Alternatives

Proposed work common to all build alternatives includes replacing some or all of the existing roadway approaches to the bridge, replacing existing guardrails and end treatments, relocating existing conflicting utilities, and minor drainage work such as new dikes and over-side drains. Bridge supports would include abutments installed along the stream banks with piles installed within the streambed, with the number of piles varying by project alternative. Existing sacked concrete/rock slope protection (RSP) along the stream banks would be removed and replaced with new RSP.

Alternative 1—Widen Shoulders/Bridge Structure via Retrofit of Existing Structure

This Alternative would accomplish the standard shoulder width via retrofitting of the existing bridge structure. The retrofit would consist of installing additional piles on the outside of the existing bridge column bents. A large, new bent cap/beam would encompass the existing bent cap, and a new cast-in-drill-hole (CIDH) pile and column would be added to each of the four existing column supports/bents. In addition, a lower "link beam" would connect the existing columns together. The new beam and piles would strengthen the existing bridge so that it would adequately perform during a seismic event. Work on the bridge would include cold planning and overlaying of the existing pavement and installation of standard guardrails.

Alternative 2—Widen Shoulders/Bridge Structure via Structure Replace [Cast-in-Place/Pre-Stressed (CIP/PS) Voided Slab Bridge Option]

Alternative 2 proposes to replace the existing bridge structure with a CIP/PS voided slab bridge. The proposed new structure would be a 3 span bridge, with 2 supporting column bents (versus the current existing 5 span, 4 bent column support system). The structure itself would accommodate the proposed 5 feet wide inside shoulder, two 12 feet wide lanes, and have a right shoulder width of 11 feet - 6 inches, which exceeds the 10 feet minimum shoulder requirement. This additional widening of the shoulder over the bridge is necessary for staging the construction activities which will allow for accommodating bicycle traffic during the two stages of bridge construction.

The construction of the new structure would need to occur over a 2 year time frame, with construction activities within the creek bed limited to June 1 to October 31 of each year, due to environmental restrictions.

The profile of the bridge/roadway would be raised between 0.4 feet to 0.9 feet to allow for clearance of the bridge soffit above the potential of a 100 year mean sea level rise.

Approach slabs as well as the adjacent roadway elements would be modified to conform the roadway to the new bridge.

Alternative 3—Pre-cast/Pre-stressed Voided Slab Bridge

Alternative 3 is identical to Alternative 2, with the exception of the bridge type proposed. Alternative 3 would utilize a PC/PS Voided Slab bridge option, and as such, no falsework would be required to support the new bridge soffit during construction. This would result in reduced impacts to the existing creek bed from falsework as compared to Alternative 1, which would utilize falsework.

1.4.2 No-Build (No-Action) Alternative

Alternative 4

The No Build Alternative would continue to maintain non-standard shoulders, non-standard bridge railing, provide inadequate shoulder width for bicycle use, also does not address the seismic inadequacies of the existing bridge foundation.

1.4.3 Preferred Alternative

Alternative 3: Widen Shoulders/Bridge Structure via Structure Replace (Pre-Cast/Pre-Stressed (PC/PS) Voided Slab Bridge Option)

After public circulation of the Initial Study with proposed Mitigated Negative Declaration, Alternative 3 was selected as the preferred alternative by the Project Development Team at a meeting on March 21, 2018. Differences between construction methods, detour options and environmental impacts of the alternatives were discussed. Alternative 3 was selected because it would utilize a PC/PS Voided Slab bridge option and as such, no falsework would be required to support the new bridge soffit during construction. As a result, there would be less impact to the existing creek bed in comparison to Alternatives 1 and 2. This would also limit encounters in areas with sensitive and protected species compared to Alternatives 1 and 2. In addition, this alternative has a greater potential to help shorten the construction duration and would provide a better opportunity to employ Accelerated Bridge Construction (ABC) methods. The use of ABC option will be determined during the design phase and at the Bridge Type Selection Meeting. Qualifying for ABC would aid in reducing the construction schedule from two to one year.

The proposed new structure would be a 3 span bridge, with 2 supporting column bents (versus the current existing 5-span, 4 bent column support system). The structure itself would accommodate the proposed 5 feet wide inside shoulder, two 12 feet wide lanes, and have a right shoulder width of 11 feet - 6 inches, which exceeds the 10 feet minimum outside shoulder requirement. This additional widening of the shoulder over the bridge is necessary for staging the construction activities which will

allow for accommodating bicycle traffic during the two stages of bridge construction. Detour alternatives for cyclists will be investigated during the design phase to eliminate the need for additional widening beyond the standard lane and shoulder widths. The bridge rail will be a metal 'see-through' ST Type Rail.

The construction activities for the new bridge would occur over a 2 year time frame. Due to environmental restrictions construction activities within the creek bed will only be allowed between June 1 to October 31.

The profile of the bridge/roadway would be raised between 0.4 feet to 0.9 feet to allow for clearance of the bridge soffit above the projected 100-year mean sea level rise.

The design features proposed above will comply with all applicable geometric design standards within the scope and limits of this project. Beyond the bridge replacement and new approach slabs, the roadway paving will conform to existing non-standard highway features. The existing outside shoulder on Route 1 immediately north and south of the existing bridge is 8 feet wide. The outside shoulder north and south of the bridge approach slab will taper to conform to the existing shoulder widths. The existing left turn channelization and median widths immediately north and south of the bridge are non-standard. The existing median is 22 feet wide and approximately 10 feet wide where existing left turn channelizations are constructed within the median. The existing channelization lengths are not standard (channelization at the intersection of Cass Avenue north of the bridge is approximately 150 feet and channelization at Studio Drive intersection south of the bridge is approximately 450 feet). The proposed construction will conform within the limits of the channelization and maintain the existing condition. Addressing these adjacent non-standard highway features is not within the scope of this project.

A collision analysis was requested for the intersection at Cass Avenue. A Collision Analysis for a quarter mile segment north and south of the bridge was completed on March 13, 2018 with data for a three-year period from 1/1/2013 to 12/31/2015. The analysis found one collision within the segment near the 13th Street off-ramp located approximately 1050 feet north of the Old Creek Bridge. The analysis concluded that there have been no collisions associated with the narrow median width (northbound) north of Old Creek Bridge.

Alternate Bridge Staging Plan - It may be possible to stage construction so that the new bridge is completed in one year. However, a final determination cannot be made until a final Geotechnical and Foundation report is completed. The current working days calculations are based on foundation designs and dewatering activities that exceed the five month work window allowed within the creek bed. Thus a 2 year time frame is the current schedule.

The alternate staging to reduce the construction schedule would consist of constructing the entire structure rather than half as proposed in the above alternatives. This could be achieved by diverting Northbound (NB) traffic to the Southbound (SB)

Old Creek Bridge (Bridge Number 49-70L). The existing SB bridge consists of two 12 feet wide travel lanes, 5 feet wide inside, and 8 feet wide outside shoulders. A total roadway width of 37 feet. This existing bridge/roadway cross section could be temporarily reconfigured to allow for one 12 feet wide travel lane for north and south bound directional traffic separated by a temporary traffic safety barrier (K-Railing) and include 5 feet outside shoulders that would be wide enough to allow for bicycle traffic. The feasibility of this option will be considered once all final studies are completed.

1.5 Alternatives Considered but Eliminated from Further Discussion

Alternative 1: —Widen Shoulders/Bridge Structure via Retrofit of Existing Structure

Alternative 1 was rejected because it has greater environmental impacts due to the need for utilizing false work during construction and the bridge would be constructed in two seasons, which would not provide an opportunity for an accelerated construction schedule to one year.

This Alternative would accomplish the standard shoulder width via retrofitting of the existing bridge structure. The retrofit would consist of installing additional piles on the outside of the existing bridge column bents. A large, new bent cap/beam would encompass the existing bent cap, and a new cast-in-drill-hole (CIDH) pile and column would be added to each of the four existing column supports/bents. In addition, a lower "link beam" would connect the existing columns together. The new beam and piles would in theory strengthen the existing bridge so that it would adequately perform during a seismic event. However, the installation of the retrofit related items, like the new large superstructure bent caps and the new link beams connecting the existing columns would entail significantly more temporary and permanent soil disturbance/environmental impacts to the existing streambed than that of the replace bridge alternatives. Also, the new superstructure bent caps and link beams of the retrofit would constrict water flow beneath the existing bridge and could cause flooding/water backup upstream of the bridge as well as cause downstream erosion when water is released from the upstream dam at Whale Rock Reservoir. This could also result in more scour to existing creek embankments and foundation of the adjacent south bound bridge.

Alternative 2: Widen Shoulders/Bridge Structure via Structure Replace (Cast-in-Place/Pre-Stressed (CIP/PS) Voided Slab Bridge Option)

Alternative 2 was rejected because when compared to Alternative 3, the need for false work would reduce the opportunity for an accelerated construction schedule that could shorten the construction schedule to one year from two years. It was also rejected because it has greater environmental impacts than Alternative 3 due to the need for false work during construction.

Alternative 2 proposes to replace the existing bridge structure with a CIP/PS voided slab bridge. The proposed new structure would be a 3 span bridge, with 2 supporting column bents (versus the current existing 5-span, 4 bent column support system).

The proposed geometric features and construction time frame are identical to Alternative 3.

The structure itself would accommodate the proposed 5 feet wide inside shoulder, two 12 feet wide lanes, and have a right shoulder width of 11 feet - 6 inches, which exceeds the 10 feet minimum shoulder requirement. The construction of the new structure would need to occur over a 2 year time frame, with construction activities within the creek bed limited to June 1 to October 31 of each year, due to environmental restrictions. The profile of the bridge/roadway would be raised between 0.4 feet to 0.9 feet to allow for clearance of the bridge soffit above the projected 100-year mean sea level rise.

Alternative 4: No Build

The no-build alternative was rejected because it does not meet the purpose and need for the project. Traffic on the existing highway would continue to utilize existing narrow non-standard shoulders, non-standard bridge railings, provide inadequate shoulder width for bicycle use, and would not rectify the seismic inadequacies of the existing bridge foundation.

1.6 Alternative Considered but Eliminated from Further Discussion Prior to Draft Environmental Document

Single Span Structure Alternative

At the project's Scoping Team Field Review Meeting in October 2016, local resource agency staff suggested that Caltrans investigate a single span option for bridge replacement. Prior to this field review meeting an initial review of a single span structure was conducted by District Design and Structures Design, but the option was not developed further for cost and environmental impact reasons. However, due to the suggestion above, a more detailed design study of the single span option was conducted.

The Single Span Structure Alternative would involve constructing a bridge structure that would be supported by abutments at either end of the bridge. This would remove the need for construction of any intermediate column supports/bents within the creek bed. Such a structure would require an estimated soffit depth of 9 feet. This is 6'-3" taller than the proposed replacement soffit depths of Alternatives 1 and 2.

The following impacts to the NB mainline were identified:

1. The proposed structure depth would require raising of the NB lanes vertical profile by a minimum of 6.25 feet.

2. Profile raising would impact roadway height and construction limits, increasing the construction limits by an additional half-mile in each direction. The 13th Street off-ramp and Studio Drive intersection would likely be impacted as well.

3. There would be a visual impact (decreased ocean view) to persons east of the northbound lanes.

4. Cass Avenue would no longer have access to Route 1 NB lanes, only right-in and right-out turns would be possible. A retaining wall would be required in the median between the southbound and northbound lanes, with a half-concrete barrier, to retain the embankment of the higher northbound lanes. This would be an additional visual impact to the area.

5. Limited access from Cass Avenue will impact the operations of 13th Street Interchange with potential for increasing the need for operational improvements.

6. Beach access would be impacted as people would no longer be able to utilize Cass Avenue by taking left turns from NB Route 1 and left turns on to NB Route 1. Instead travelers would have exit to 13th Street Interchange for beach access and travel through Cayucos to access NB Route 1. This will increase local traffic, travel distance, and time traveled.

1.7 Permits and Approvals Needed

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Programmatic Biological Opinion for the California red-legged frog	Approval to use Programmatic Biological Opinion granted by USFWS on August 16, 2017
U.S. Fish and Wildlife Service	Biological Opinion for tidewater goby	Biological Opinion granted by USFWS on August 16, 2017
National Marine Fisheries Service	Biological Opinion for steelhead trout	Biological Opinion granted by NMFS on September 25, 2017
U.S. Army Corps of Engineers	Section 404 Nationwide Permit for impacts to Waters of the United States	Obtain during the Plans, Specifications & Estimate (PS&E) phase of the project
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement for impacts to Old Creek	Obtain during the Plans, Specifications & Estimate (PS&E) phase of the project

San Luis Obispo County	Coastal Development Permit	Obtain during the Plans, Specifications & Estimate (PS&E) phase of the project
Central Coast Regional Water Quality Control Board	Section 401 Certification for impacts to Waters of the United States	Obtain during the Plans, Specifications & Estimate (PS&E) phase of the project

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

As part of the scoping and environmental analysis done for the project, the following environmental issues were considered, but no adverse impacts were identified. So, there is no further discussion of these issues in this document.

- **Agriculture and Forest Resources:** There is no farmland or forest resources in the project area. (Source: Rural Land Use Category map)
- **Cultural Resources:** A Historic Property Survey Report (HPSR) for the project was completed in January 2017 (MacDonald 2017). The HPSR provides 1) a determination of the Area of Potential Effects; 2) identification of potential historic properties located within the Area of Potential Effects; and 3) a Finding of No Historic Properties Affected. As assigned by the Federal Highway Administration pursuant to U.S. Code 326, Caltrans has determined a Finding of No Historic Properties Affected according to Section 106 Programmatic Agreement Stipulation IX.A and 36 Code of Federal Regulations 800.4(d)(l), is appropriate. Section 106 is complete, and no further studies are required. (Historic Property Survey Report for the Old Creek Bridge Replacement Project—January 2017)
- **Existing and Future Land Use:** The proposed bridge project will not change or affect existing land uses. (Source: Project Description)
- **Community Character and Cohesion:** The project will not affect the character or cohesion of the community because it involves either replacement or retrofit and widening of the existing northbound bridge only. (Source: Project Description)
- **Farmlands/Timberlands:** The project would not result in impacts to farmland or timberland because it is not near or next to any farmlands or timberlands. (Source: Project Description)
- **Growth:** The project does not add capacity to the roadway and will not affect the growth rate of the city or cause an increase in population as the project will involve only replacement or retrofit and widening of the existing northbound bridge. (Source: Project Description)
- **Wild and Scenic Rivers:** The project is not near or next to any wild and scenic rivers. (Source: Federal Emergency Management Agency 2015 Map)

Relocations and Real Acquisition: No business, residences or private property would be acquired for this project. The project and construction staging area will occur within the existing right-of-way. It is anticipated that most of the work to construct the bridge itself can be accomplished within the existing State Right of Way. However, an easement of the adjacent property (east of the existing bridge) will be required in order to facilitate construction. (Source: Project Description)

- **Environmental Justice:** No minority or low-income populations will be adversely affected by the project. Therefore, this project is not subject to the provisions of Executive Order 12898. (Source: Project Description)
- **Paleontology:** The proposed work will be within portions of previously disturbed and imported soils from the original bridge construction and in portions of native soil consisting of sands and gravels of fluvial and alluvial origin. The probability of encountering paleontological resources within high energy environments such as the native alluvial sediments is low. Therefore, there should be no paleontological issues associated with the project. (Paleontology Report 2016)
- **Traffic and Transportation/Pedestrian and Bicycle Facilities:** The road shoulders leading up to the bridge are 8 feet in width, while the existing bridge has shoulders that are 2 feet in width. A minimum of 8 feet of additional shoulder width would be provided in all project build alternatives for the project. There would be no adverse impacts on traffic and transportation because traffic volumes are not expected to increase. The new bridge will remain a two-lane bridge with the same standard 12-foot lanes, while adding 8-foot shoulders. Minor temporary delays will occur during the duration of construction. A Traffic Management Plan would be establish to reduce delays and to assist emergency responders during construction to minimize response time. (Project Report 2017)
- **Water Quality and Storm Runoff:** The proposed project will not increase any net area of impervious surfaces. (Water Quality Assessment 2017)
- **Stormwater and Non-Stormwater Pollutants:** Grading and paving to conform to the bridge and shoulder widening are activities that could generate stormwater pollutants. By implementing standard construction methods, waste management procedures, and stormwater best management practices (BMPs), the proposed project will not generate significant levels of stormwater pollutants. (Water Quality Assessment 2017)
- **Floodplain:** Old Creek is not in the 100 year flood plain. (Location Hydraulic Study 2017)

2.1 Human Environment

2.1.1 Consistency with State, Regional and Local Plans

Affected Environment

The proposed project falls within the Estero Area Plan of Land Use Element and Local Coastal Plan of the San Luis Obispo County General Plan. The Estero Area Plan was adopted March 1988 and the Cayucos and Rural portion of the plan were updated January 2009. The specific local policies that are relevant to this project are identified in Table 1.

Table 1. Consistency with California Coastal Act and San Luis Obispo Local Coastal Plan

Policy No.	*Subject of Policy*	*Discussion*	*For Further Discussion in this Document*
Local Coastal Policies[1] 1,5,7,8 & 9 under California Coastal Act policies 30251-30255	***Scenic Resources*** *1. Protection of Visual and Scenic Resources 5. Landform Alterations 7. Preservation of Trees and Native Vegetation 8. Utility Lines 9. Signs*	*Consistent All 3 alternatives will strive to preserve and protect scenic vistas and sensitive habitats. Grading and vegetation removal will be returned to its natural appearance. Site will be graded and replanted with similar species at a 3:1 ratio. Utility lines will be placed in a manner as to minimize their visibility from the road. Construction signs will be temporary and designed to be simple and easy to read.*	*2.1.4*
Local Coastal Policies 1,2, 3,4,7,11-13&20 under California Coastal Act policies 30212, 30230,31, 30235 30240-30244	***Land Resources /Environmentally Sensitive Habitats (ESHA)*** *1. Land Uses Within or Adjacent to Environmentally Sensitive Habitats. 2. Permit Requirement 3. Habitat Restoration 7. Protection of ESHA(wetlands) 11-13. RWQCB, CDFW & Diking, Dredging or Filling Wetlands.*	*Consistent The Project would avoid environmentally sensitive habitats where practicable and enhance or replace lost habitats. Averaging permanent impacts of communities, jurisdictional areas and critical habitats, Alt. 1 has an average of .034 acres and Alt. 2 & 3 have an average of .032 acres. No agricultural land use is in project vicinity. A qualified Biologist will provide monitoring, training and evaluations for effective mitigation measures where appropriate. All 3 alternatives have an equal permanent impact of .001acres. Several types of compensatory mitigation are available to offset impacts to waters of the United States, including creation, restoration, enhancement, and preservation of either on-site or off-site wetlands and/or other waters. Avoidance and minimization measures recommended.*	*2.3*
Local Coastal Policy 1	***Public Access*** *1. Protection of Existing Access.*	*Consistent During project construction, access will be maintained across the bridge. If closure of portions of the bridge*	*1.3 &2.3.7*

[1] Local Coastal Program Policy Documents are a Portion of the San Luis Obispo County Land Use Element of the General Plan

under California Coastal Act policies 30210-30214		*is necessary a temporary detour will be provided during construction. None of the proposed alternatives will interfere with existing public access. All 3 alternatives improve coastal access by increasing roadway shoulder width to accommodate pedestrians and bicycles.*	
California Coastal Act policies 30230-30236	***Marine Environment***	*Consistent* *The Project would avoid marine habitat and includes stringent safeguards to ensure minimal inadvertent discharge of material to the stream.*	*2.3*
California Coastal Act policies 30220-30224	***Recreation***	*Consistent* *During project construction, access will be maintained across the bridge. The widening of the shoulders will facilitate bicycle access the bridge and will facilitate access to coastal recreational uses.*	*2.3.7*

Environmental Consequences

The proposed project was reviewed for consistency with the applicable policies of the San Luis Obispo County General plan with a focus on consistency with the Local Coastal Plan. The applicable polices and the project impact to the resources identified are listed in Table 1.

Although this project would result in some minor impacts to Coastal resources, measures are included as part of this project to minimize those impacts. With those measures included the project is consistent with state, regional and local plans.

Detailed discussion of the resources identified in Table 1 can be found in Section 2.1.4 Visual, 2.3 Biology, and 2.3.7 Construction Impacts.

Avoidance, Minimization, and/or Mitigation Measures

The project is consistent with state, regional, and local plans and does not cause adverse impacts with respect to land use. Avoidance, minimization, and mitigation measures will be used to minimize impacts to the creek during construction and to restore the native habitat to its original condition. See sections 2.1.4 Visual, 2.3 Biology, and 2.3.7 Construction Impacts for specific mitigation measures proposed for the resources identified in Table 1.

All development and land divisions within or adjacent to an Environmentally Sensitive Habitat Area (ESHA) shall be designed and located in a manner which avoids any significant disruption or degradation of habitat values. In cases where development within the ESHA cannot be avoided, the development shall be modified as necessary so that it is the least environmentally damaging feasible alternative.

2.1.2 Coastal Zone

Regulatory Setting

The project has the potential to affect resources protected by the Coastal Zone Management Act of 1972 (CZMA). This act is the main federal law enacted to preserve and protect coastal resources. The act sets up a program under which coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review federal permits and activities to determine if they are consistent with the state's management plan.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the Coastal Zone Management Act: they include the protection and expansion of public access and recreation; the protection, enhancement, and restoration of environmentally sensitive areas; the protection of agricultural lands; the protection of scenic beauty; and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Just as the federal Coastal Zone Management Act delegates power to coastal states to develop their own coastal management plans, the California Coastal Act delegates power to local governments to enact their own local coastal programs (LCPs). LCPs determine the short- and long-term use of coastal resources in their jurisdiction consistent with the California Coastal Act goals. A federal consistency determination may be needed as well.

Affected Environment

Old Creek is the outlet from Whale Rock Reservoir. The reservoir was formed by Whale Rock Dam on Old Creek, which was completed in 1961. Whale Rock Dam has not had reservoir water overtop the dam for several years, particularly during the recent drought conditions experienced in California. From the vicinity of Whale Rock Dam, Old Creek is oriented roughly north to south, proceeding through the southern section of Cayucos and just west of Cayucos-Morro Bay District Cemetery, before reaching the Pacific Ocean (unless a seasonal sandbar is present, forming a lagoon).

Applicable policies of the Land Use Element and Local Coastal Plan of the San Luis Obispo County General Plan, Estero Area Plan (2009) were reviewed. The project is planned with consideration for preserving the natural environment of Cayucos, including protection of the seashore, estuaries and coastal area with minimal impairment of physical and visual accessibility. Applicable policies are per the California Environmental Quality Act standards; consistencies with the General Plan/Local Coastal Plan are discussed in Section 2.1.1, Consistency with State, Regional and Local Plans. See table 1 for a list of policies considered.

Environmental Consequences

The applicable policies of the San Luis Obispo County Local Coastal Plan were reviewed and the consistency of the project with the policies was analyzed. See table 1 for a detailed list of the policies examined and the potential effects of the proposed project.

The project will minimally affect visual and biological resources. The project will affect potential U.S. Army Corps of Engineers/Regional Water Quality Control Board jurisdictional other waters, California Department of Fish and Wildlife jurisdictional areas, and California Coastal Commission coastal zone wetlands/environmentally sensitive habitat areas.

Avoidance, Minimization, and/or Mitigation Measures

The project is consistent with the Local Coastal Plan. Avoidance, minimization, and mitigation measures will be used to minimize impacts to the creek during construction and to restore the native habitat to its original condition. See sections 2.1.4 Visual, 2.3 Biology, and 2.3.7 Construction Impacts for specific mitigation measures proposed for the resources identified in Table 1.

All development and land divisions within or adjacent to an Environmentally Sensitive Habitat Area (ESHA) shall be designed and located in a manner which avoids any significant disruption or degradation of habitat values. In cases where development within the ESHA cannot be avoided, the development shall be modified as necessary so that it is the least environmentally damaging feasible alternative.

2.1.3 Utilities and Emergency Services

Affected Environment

A large high pressure water line is located to the east of the bridge. There is also an overhead electric line and telephone/cable communication lines within the project footprint.

Emergency services in the project area are provided by the California Highway Patrol, San Luis Obispo County Sheriff's Department, the San Luis Obispo County Fire Department and Cal Fire.

Environmental Consequences

The high pressure water line does not directly conflict with the proposed work, however it will be necessary to identify and require it be protected in place from the adjacent bridge work (e.g., from temporary excavations for bridge access, shoring, etc.).

There is also an overhead electric line and telephone/cable communication lines that will be permanently relocated underground to allow for construction of the replacement bridge. Ideally, the relocation would occur prior to commencing construction activities.

During project construction emergency service access will be maintained. Traffic control will mirror staged construction of the bridge. Traffic will be separated from construction activity by temporary railing, type-k. During Stage 1, when the outside half of the bridge is being demolished and replaced, traffic will be limited to an 11' lane and a 5' shoulder to accommodate bicycle traffic. Access to the existing left-turn channelization to Cass Avenue will not impacted. During Stage 2, when the inside half of the bridge is being

demolished and replaced, traffic will shifted to the new bridge and limited to one 11' lane and a 5' shoulder to accommodate bicycle traffic. Left turns on to Cass Road will be restricted due to space requirements for construction activity; signage for a detour route will be provided.

Coordination between the Caltrans Resident Engineer, responsible for construction and the local emergency service providers is a standard practice on Caltrans construction sites. This coordination would result in any delay times being as minimal as possible in the event of an emergency vehicle needing access through the construction site.

Avoidance, Minimization, and/or Mitigation Measures

The overhead electric line and telephone/cable communication lines would be permanently relocated underground to allow for construction of the replacement bridge. The relocation would occur before construction begins. Coordination between Caltrans and the utility companies will be done to ensure minimal disruption to services during project construction.

Coordination will take place between the Caltrans Resident Engineer and local emergency service providers during project construction to minimize delays through the construction site.

2.1.4 Visual/Aesthetics

Regulatory Setting

The California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic natural, scenic and historic environmental qualities" (California Public Resources Code Section 21001[b]).

Affected Environment

The following analysis regarding potential impacts to visual resources is derived from the Visual Impact Study (March 2017).

The community of Cayucos sits on a gently sloped marine terrace situated between the Pacific Ocean and a series of low foothills rising up to the Santa Lucia Mountain Range. The diverse geologic features that characterize the region contribute to the high scenic quality of Cayucos and the coast. The most notable natural visual resources are Morro Rock near Morro Bay to the south, the fertile valleys and hills east of the project, and unobscured views of the Pacific Ocean. The vegetation of the surrounding open space is predominately denuded grassland and scattered coyote brush, with natural stands of oak, sycamore, and pine trees at the lower elevations mostly on the north- and east-facing slopes. Large windrows of eucalyptus trees can be seen in the regional landscape associated with ranches and old homesteads.

Cayucos is a compact community with well-defined edges, surrounded by the Pacific Ocean to the west and rural open space to the north, south and east. Approximately one-

half mile of open space separates the southern limit of Cayucos from its neighbor to the south, Morro Bay.

Cayucos follows an overall linear form as it hugs the coast. SR 1 (also known as Highway 1), a State Scenic Highway and National Scenic Byway, generally parallels the coastline through Cayucos. Most of the town's northern portion sits between SR 1 and the ocean but, as the community stretches south along the coast, residential neighborhoods line the highway on both sides.

Environmental Consequences

The existing visual quality and character of Cayucos is based to a large degree on views of the Pacific Ocean, beach and coastline, the Cayucos Pier, the undeveloped portions of the inland hillsides, and the older downtown area. Although it does afford quality views to the surrounding area, SR 1 itself through Cayucos adds little to the high visual quality of the area. As a four-lane highway with generally full standard lane and shoulder widths, the facility has somewhat urban characteristics, unlike SR 1 elsewhere through the rural areas to the north.

The project would change the visual character of the project site by increasing the bridge width, altering the bridge rail, and reducing roadside vegetation. The overall effect of these changes would be a somewhat larger, more engineered-looking highway facility in the immediate area. This character change would be minor, however, and would be subordinate to the surrounding high quality viewshed (general area view). Similar shoulder widths and bridge size are seen elsewhere throughout Cayucos and would not be inconsistent with the SR 1 viewing experience throughout this somewhat developed area. Although viewer sensitivity along SR 1 is considered high, it is expected that, to many viewers, the project would not seem out-of-place with its setting.

The visual context of the project includes the southbound bridge structure, which would remain in place. Adverse impacts to the visual quality of the site would occur if the rail proposed for the project were out-of-character with the railing of the remaining southbound bridge. By constructing a tubular steel rail type, the new bridge would be generally consistent with the aesthetic characteristics of the adjacent southbound rail style.

The loss of vegetation at the project site would also contribute to a change in visual quality. By replacing removed vegetation following construction, this potential adverse effect to the existing visual character of the site and its surroundings would be minimized.

Avoidance, Minimization, and/or Mitigation Measures

With implementation of the following measures, the project would be consistent with the aesthetic and visual resource protection goals along SR-1 and the community as defined by the State Scenic Highway and National Scenic Byway goals as well as Coastal Act policies:

1. Bridge rail will be a metal "see-through" type.
2. All new and replacement end treatment guardrail posts shall be colored with a stain such as Natina, as directed by Caltrans Landscape Architecture staff.
3. If possible, all vegetation control treatments should use a pervious surface such as crushed shale. If shale is not feasible, the surface paving shall be colored to match the color of the adjacent dirt, as directed by Caltrans Landscape Architecture staff.
4. Replace the existing yellow-array crash cushions in the median with an end treatment system that more closely resembles double thrie beam barrier.
5. Paint all new utility conduit attached to the northbound and southbound bridges to match the color of the bridge it is attached to.
6. Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques that save the most existing vegetation possible should be employed.
7. Revegetate the creek banks with native vegetation as directed by the Caltrans Biologist in conjunction with Caltrans Landscape Architecture.
8. Revegetate disturbed areas along the highway roadside, using plants which at maturity do not block ocean views as seen from the Cayucos - Morro Bay Cemetery.
9. Following construction, re-grade and re-contour any new construction access roads, staging areas and other temporary uses as necessary to match the surrounding natural topography.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A. To comply, the following must be analyzed:

- Practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.

- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

Affected Environment

A Location Hydraulic Study for the Old Creek Bridge Replacement was completed on March 1, 2017 and a Hydrology Report was completed on September 21, 2017.

Old Creek is the outlet from nearby Whale Rock Reservoir, located approximately 0.68 mile (straight-line distance) north of the project. The reservoir was formed by the building of Whale Rock Dam on Old Creek, which was completed in 1961. From Whale Rock Dam, water is released to Old Creek, which flows or ponds perennially and roughly north to south proceeding through the southern section of Cayucos and just west of Cayucos-Morro Bay District Cemetery through the vicinity of the project before forming a lagoon at the Pacific Ocean. The watershed for Old Creek consists of the runoff from Whale Rock Reservoir and a small underground spring. The spring provides the small amount of water that sits in the creek. The wetted portion of Old Creek in the vicinity of the existing bridge varies from approximately 30 to 60 feet wide and supports fairly deep, relatively still open water. While the stretch of stream within the project area is perennially inundated, it does not typically flow except during and after rain events. The slope of this stream reach is estimated at less than 1%. Average water depths were observed to range from 3 to 6 feet in the vicinity of the bridge during field visits from 2013 and 2016. However, Old Creek does not fall within a FEMA mapped 100 year floodplain.

Environmental Consequences

Flow rates in Old Creek vary. The 100-year flow is 4,600 cubic feet per second (cfs) with a water surface elevation of 20 feet; 50-year flow of 3,750 cfs with a water surface elevation of 18 feet. (Hydrology Report - September 21, 2017)

The approximate sea level rise for the Cayucos area is 4 feet. This information comes from the National Oceanic and Atmospheric Administration website "Sea Level Rise Viewer." The website states the area is at medium-level risk for sea level rise. However, the bridge location shows no sea level rise.

The project will not encroach into a FEMA mapped 100 year floodplain.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project is not located in a 100 year floodplain, therefore no mitigation measures are necessary for hydraulics or floodplain. For impacts to Wetlands and Other Waters see section 2.3.2.

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans' Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. Structures are designed using Caltrans' Seismic Design Criteria. The Seismic Design Criteria provide the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Caltrans Division of Engineering Services, Office of Earthquake Engineering and Seismic Design Criteria.

Affected Environment

A Preliminary Foundation Report for Old Creek Bridge was completed on January 2017.

Preliminary information regarding the site characteristics was obtained from published geologic maps and previously completed geotechnical investigations and reports. The project is located in the Coast Ranges geomorphic province of California. According to the Geologic Map of the Morro Bay Quadrangle, surficial materials at the site are Quaternary Alluvium consisting of gravel, sand clay. The original bridge maintenance record describes the waterway as "sandy gravel fairly heavy growth." Subsequent bridge maintenance records describe the channel condition as "trapezoidal earthen channel."

The 2014 Preliminary Seismic Recommendations information provides a groundwater elevation of approximately 11 feet. It is reasonable to expect the highest groundwater elevation to be approximately the highest elevation of the surface water in the Old Creek channel. At times when the water level in the creek is declining, the groundwater elevation may be higher than the surface water elevation. Soils must be below the groundwater table for liquefaction to occur. Liquefaction is the partial or complete loss of soil shear strength due to the build-up of excess pore water pressure during a seismic event. Soils with a potential for liquefaction are loose cohesionless soils below the groundwater table. Based on soil types and site conditions encountered at the project site, potential for liquefaction is high due to the loose nature of the soils and depth to groundwater.

Seismicity

In accordance with the 2009 Caltrans Seismic Design Procedure, Table 2 provides the relevant active and potential active faults that are located in the vicinity of the project site.

Fault Name	*Fault Type*	*Moment magnitude of maximum credible earthquake*	*Distance from Fault to Project Site (miles)*	*Deterministic Peak ground acceleration (gravity)*
Cambria Fault	Normal	6.3	0.88	0.54
Oceanic-West Huasna Fault	Reverse	6.9	3.35	0.57

Table 2 Active and Potentially Active Faults

The Cambria Fault is shown to be located as close as 0.88 mile from the project location. However, the structure does not lie within an Alquist-Priolo Earthquake Fault Zone, and the USGS Quaternary Fault and Fold Database does not show a fault within 1000 feet of the structure in the "Historic "and "Holocene to Latest Pleistocene" databases. Per Caltrans practices (MTD 20-10), a Fault Rupture Report is not required to evaluate the ground rupture hazard.

Environmental Consequences

The existing Old Creek Bridge will be removed and replaced with a new bridge which will be constructed to meet current seismic design standards. The new bridge will employ more robust support elements (columns, bents, abutments, etc.) along with improved pile designs which will minimize the potential risk associated with strong ground shaking and potential liquefaction hazards. By incorporating these features the new bridge will better protect the traveling public.

Avoidance, Minimization, and/or Mitigation Measures

The bridge design will incorporate Caltrans current Seismic Design Standards which will reduce the potential for failure from seismic events.

2.2.2 Hazardous Waste and Materials

Regulatory Setting

Hazardous materials, including hazardous substances and waste, are regulated by many state and federal laws. Statues govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

The main federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976. The purpose of CERCLA, often referred to as “Superfund,” is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous waste generated by operating entities.

Other federal laws include the following:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control Standards, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement the Resource Conservation and Recovery Act in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material are vital if such material is found, disturbed, or generated during project construction.

Affected Environment

An Initial Site Assessment was completed for this project in June 2016. The Initial Site Assessment involved a field review of the existing bridge and the project area. The field review was conducted to determine if the existing bridge materials and disturbed soils have the potential to contain hazardous materials that may pose a hazard to workers during demolition and disposal. Potential hazardous materials may include asbestos containing materials, lead based paint, and Aerially Deposited Lead (ADL).

Environmental Consequences

The material sampling and testing during the Initial Site Assessment found ADL is a potential hazardous waste issue. No hazardous asbestos-containing materials or lead

based paint was found on the bridge structure. Treated Wood Waste is present as guardrail posts to be removed. Yellow traffic stripe may be removed during construction which may be a hazardous waste.

Aerially Deposited Lead

The project will involve soil disturbance, Aerially Deposited Lead (ADL) may be an issue. An ADL study will be required prior to construction in order for the materials to be handled, reused, or disposed of properly.

Asbestos and Lead-based Paint

Asbestos Containing Materials and Lead-Based Paint were not identified on the Old Creek Bridge.

Treated Wood Waste

Treated wood waste as guardrail posts would be replaced as part of the guardrail reconstruction. Approach shoulders will be widened and existing metal beam guard railing (MBGR) and wood posts will be removed and upgraded as necessary. All existing MBGR will be replaced using metal posts and plastic blocks.

Yellow Thermoplastic of Traffic Stripe

Yellow thermoplastic or traffic stripe may be removed during construction. It will be managed differently depending on its age and how it is removed.

Avoidance, Minimization, and/or Mitigation Measures

Aerially Deposited Lead

Since soil containing ADL will be disturbed, a Lead Compliance Plan will be required for worker health and safety.

An ADL study will be conducted prior to construction by certified personnel in accordance with applicable laws and regulations. If excavated ADL material contain hazardous lead concentrations and need to be exported off-site, it will require proper disposal at a Class I landfill facility per applicable laws and regulations. As an option, the Department of Toxic Substances Control and Caltrans have the "Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils" (Agreement). The Agreement allows Caltrans to reuse lead-contaminated soil within the State highway corridor in accordance with conditions in the Agreement. Conditions include proper burial of hazardous ADL soil beneath 1 foot of clean soil or under a paved surface, away from surface water bodies and at least 5 feet above maximum groundwater.

Lead-based Paint

Lead Based Paint was not found on the Old Creek Bridge during the field investigation.

Treated Wood Waste

Treated wood waste from removed MBGR posts is a designated waste and must be managed in accordance with the Alternative Management Standard (Standard). The Standard requires proper storage onsite followed by disposal at a landfill facility permitted to accept such waste.

Yellow Thermoplastic or Traffic Stripe

Older yellow thermoplastic or traffic stripe will be removed during construction, and may contain a hazardous concentrations of lead. Per Caltrans standard special provisions, yellow thermoplastic/traffic stripe will be tested for lead concentration during construction by certified personnel in accordance with applicable laws and regulations. If found hazardous for lead the removed thermoplastic/traffic stripe will be disposed at a Class I landfill facility. If not hazardous it will be disposed at a landfill facility permitted to accept such waste.

2.3 Biological Environment

2.3.1 Natural Communities

Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. The emphasis of the section should be on the ecological function of the natural communities within the area. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in the Threatened and Endangered Species section 2.4.5. Wetlands and other waters are discussed in section 2.4.2.

Affected Environment

The Natural Environment Study for the Old Creek Bridge was completed on March 24, 2017.

Central Coast Riparian Scrub

The dominant vegetation of the BSA at Old Creek Bridge can be characterized as Central Coast Riparian Scrub (Holland 1986). In this community, arroyo willow (Salix lasiolepis) is the dominant species in the overstory both upstream and downstream of the existing SR-1 bridges. The edges of the banks of Old Creek are vegetated by poison oak (Toxicodendron diversilobum), garden nasturtium (Tropaeolum majus), California blackberry (Rubus ursinus), and various non-native grasses and forbs. This community supports high quality habitat for various nesting birds and other species that frequent riparian habitats such as raccoon (Procyon lotor), striped skunk (Mephitis mephitis), and Virginia opossum (Didelphis virginiana).

Valley Fresh Water Marsh

Within gaps between the willow canopy, broadleaf cattail (Typha latifolia) dominates the instream emergent vegetation on both sides of the bridge, forming the Coastal and Valley Freshwater Marsh (Holland 1986). West of the bridge, California bulrush (Schoenoplectus californicus) and tule (Schoenoplectus acutus var. occidentalis) intersperse with the cattails. Freshwater marsh vegetation supports high quality habitat for nesting birds, cover for western pond turtle (Emys marmorata) and amphibians such as California red-legged frog (Rana draytonii), and various insects. Western pond turtles were observed during surveys basking on a log near freshwater marsh habitat along Old Creek downstream of the bridge in 2016.

Ornamental

This vegetation consists of trees and other vegetation planted along roadsides in areas where they would not occur naturally. Various ornamental trees have been planted along the edges of SR-1 such as Monterey cypress (Hesperocyparis macrocarpa), Monterey pine (Pinus radiata), and Australian tea tree (Leptospermum laevigatum). Monterey pine is found as far south as Cambria in its native range but has been planted extensively south of that location. Monterey cypress is native to the Monterey Peninsula and Point Lobos area but has been widely planted/naturalized outside its native range. Ornamental vegetation may support nesting opportunities for birds and roosting opportunities for bats but typically does not support habitat for other sensitive species.

Ruderal/disturbed

Ruderal/disturbed vegetation occurs in areas subjected to frequent disturbance and does not fit the description of any vegetation alliances described by Sawyer et al. (2009) or Holland (1986). Ruderal/disturbed vegetation flanks the edges of SR-1, dominated by weedy species such as ripgut brome (Bromus diandrus), slender wild oat (Avena barbata), fountain grass (Pennisetum setaceum), Bermuda buttercup (Oxalis pes-caprae), poison hemlock (Conium maculatum), and burclover (Medicago polymorpha). These areas are subjected to routine disturbance from vehicle and foot-traffic and do not support habitat for sensitive species.

Stream/Open Water

The stream habitat of Old Creek occurs under the riparian canopy and is interspersed with emergent vegetation. The wetted portion of Old Creek in the vicinity of the existing bridge varies from approximately 30 to 60 ft wide and supports fairly deep, relatively still open water. The substrate is silty sand and mud. As mentioned previously, a small “bowl-shaped" basin has formed in the vicinity of the bridge and water does not typically flow except during and after rain events. The slope of this stream reach is estimated at less than 1%. Average water depths were observed to range from 3 to 6 ft in the vicinity of the bridge during field visits from 2013 and 2016, but OHWM staining along the existing columns suggests water may get as deep as 8 ft during the wet season. Old Creek

supports habitat for steelhead, tidewater goby, and other fish species, although the water tends to be turbid and the quality is marginal at best during the dry months. Migration and Travel Corridors

Fish migration is possible along Old Creek during the wet season at the creek mouth (at the Pacific Ocean) for a stream distance of approximately 1.25 miles up to the Whale Rock Dam; this distance is reduced for fish by a few hundred feet during the dry season when sand bars form the lagoon. The habitat quality for fish is most likely at its highest during the wet season, where there are outflows to the Pacific Ocean that allow for fish in-migration and out-migration. Migration by amphibians and western pond turtles occurs along the extent of the corridor except for the most saline areas toward the ocean during the wet season.

Birds use the riparian habitat of Old Creek for migration and foraging and likely nest in some areas as well, though no nesting birds have been observed in the BSA during surveys. Mammals may forage along the corridor as well. Wildlife connectivity is likely maintained along Old Creek and its riparian corridor via the bridge crossing, which allows for fish passage along open water and includes only a minor break in the riparian canopy and freshwater marsh vegetation under the bridge, with dense vegetation on either side of the bridge.

Sensitive species also include taxa afforded protection or considered sensitive under various laws (e.g., NEPA, CEQA, Migratory Bird treaty Act) or under sections of the California Fish and Game Code (e.g., nesting birds), plants categorized with a California Rare Plant Rank (CRPR) by the California Native Plant Society (CNPS), and those taxa recognized as locally important or sensitive by the scientific community. Sensitive natural communities/habitats include those that are regulated or considered sensitive by federal, state, and/or local agencies or NEPA/CEQA. The known occurrences of sensitive species have been inventoried and mapped, to varying degrees of accuracy, by the CNDDB.

Environmental Consequences

Impacts to natural communities/habitats within the project BSA have been quantified based on ground disturbance, streambed disturbance, and vegetation disturbance/removal. These impact areas are a subset of the BSA and represented as the Area of Potential Impact (API), which was overlain with habitat mapping. The API includes potential disturbance areas for both permanent and temporary impacts and assumes the maximum amount of disturbance/impact associated with construction of the project (including the proposed work area, bridge structures at ground or streambed level, areas of cut and fill, staging, access, and temporary dewatering).

Permanent impacts above the streambed would result from the installation of columns to support the bridge and installation of rock slope protection along the abutments for bank stabilization. Temporary impacts would occur throughout the overall work area resulting from temporary dewatering, vegetation trimming, falsework (Alternatives 1 and 2) and equipment access and staging. Sources of impacts would be mostly from the use of construction equipment and associated worker foot-traffic.

The following table shows the affected communities, jurisdictional areas and critical habitats for each alternative in the project area. See also Figures 2-3 and 2-4.

Table 3 Affected Communities, Jurisdictional Areas and Critical Habitats

Community/Jurisdictional Area/Critical Habitat	Alternative 1		Alternatives 2 and 3	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Salix lasiolepis Shrubland Alliance	0.029 ac	0.127 ac	0.029 ac	0.127 ac
Typha Herbaceous Alliance	0.001 ac	0.042 ac	0.0001 ac	0.043ac
Ornamental	0.028 ac	0.011 ac	0.027 ac	0.011 ac
Ruderal / Disturbed	0.089 ac	0.183 ac	0.089 ac	0.182 ac
Stream/Open Water[1]	0.022 ac	0.142 ac	0.007 ac (net)*	0.155 ac
USACE CWA Wetlands[2]	0.001 ac	0.110 ac	0.001 ac	0.111 ac
USACE CWA Other Waters[3]	0.022 ac	0.142 ac	0.007 ac (net)*	0.155 ac
RWQCB Jurisdiction[4]	0.104 ac	0.321 ac	0.089 ac (net)*	0.335 ac
CDFW Jurisdiction[4]	0.104 ac	0.321 ac	0.089 ac (net)*	0.335 ac
CCC Jurisdiction[4]	0.052 ac	0.311 ac	0.037 ac (net)*	0.325 ac
Steelhead Critical Habitat[5]	0.023 ac	0.252 ac	0.008 ac (net)*	0.266 ac
CA Red-legged Frog Critical Habitat	0	0.014 ac	0	0.014 ac

[1] In this case, this area is identical to USACE CWA Other Waters and also encompasses RWQCB, CDFW, and/or CCC non-wetland waters.

[2] USACE CWA Wetlands are in areas along and/or adjacent to Old Creek that support all three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology). One link beam for Alternative 1 and one particular column for Alternatives 2 and 3 would permanently impact a small amount of USACE CWA Wetlands.

[3] USACE CWA Other Waters include perennial stream located at or below the OHWM of Old Creek and lack one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and/or wetland hydrology). For the purposes of the NES, USACE CWA Other Waters are equivalent to the area characterized as "Stream/Open Water" habitat.

[4] Includes/overlaps areas of USACE jurisdiction and extends from the channel bed above the OHWM to the tops of banks or outer edge of riparian canopy (whichever is greater). This area also comprises the entirety of the Salix lasiolepis Shrubland Alliance and areas where the tops of the streambanks extend beyond riparian vegetation.

[5] Includes federally designated critical habitat for the south-central California coast steelhead DPS. Steelhead critical habitat was quantified up to the OHWM, which equates to the totals for USACE CWA Wetlands and CWA Other Waters/Stream/Open Water.

** Permanent impacts to Stream/Open Water, USACE CWA Other Waters, and other jurisdictional areas are presented as net impacts for Alternatives 2 and 3 because the existing columns (occupying 0.002 ac of space) occur along non-wetland areas of the streambed and would be removed and replaced with new columns.*

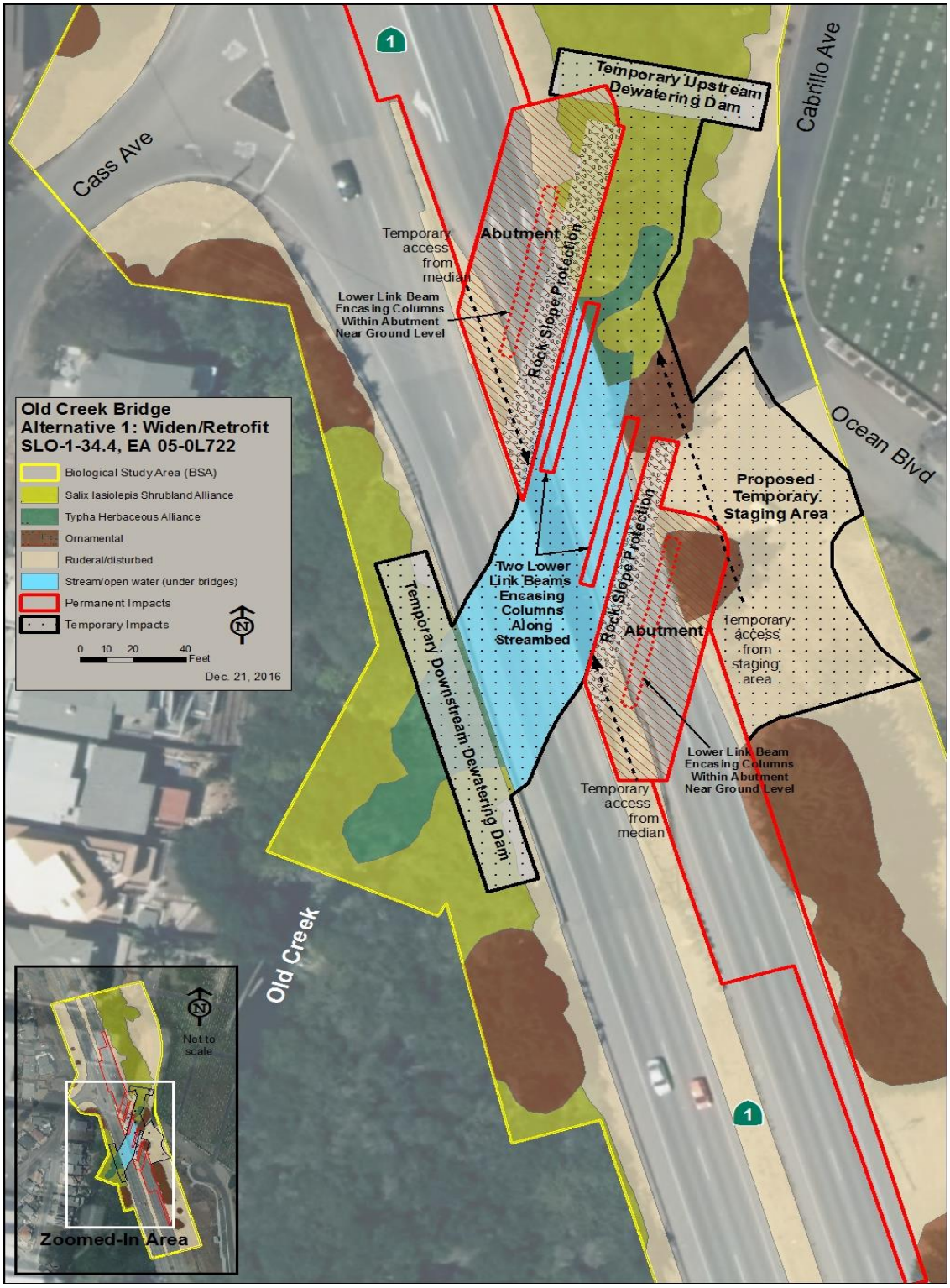


Figure 2-1 Biological Study Area and Project Area Map for Alternative 1

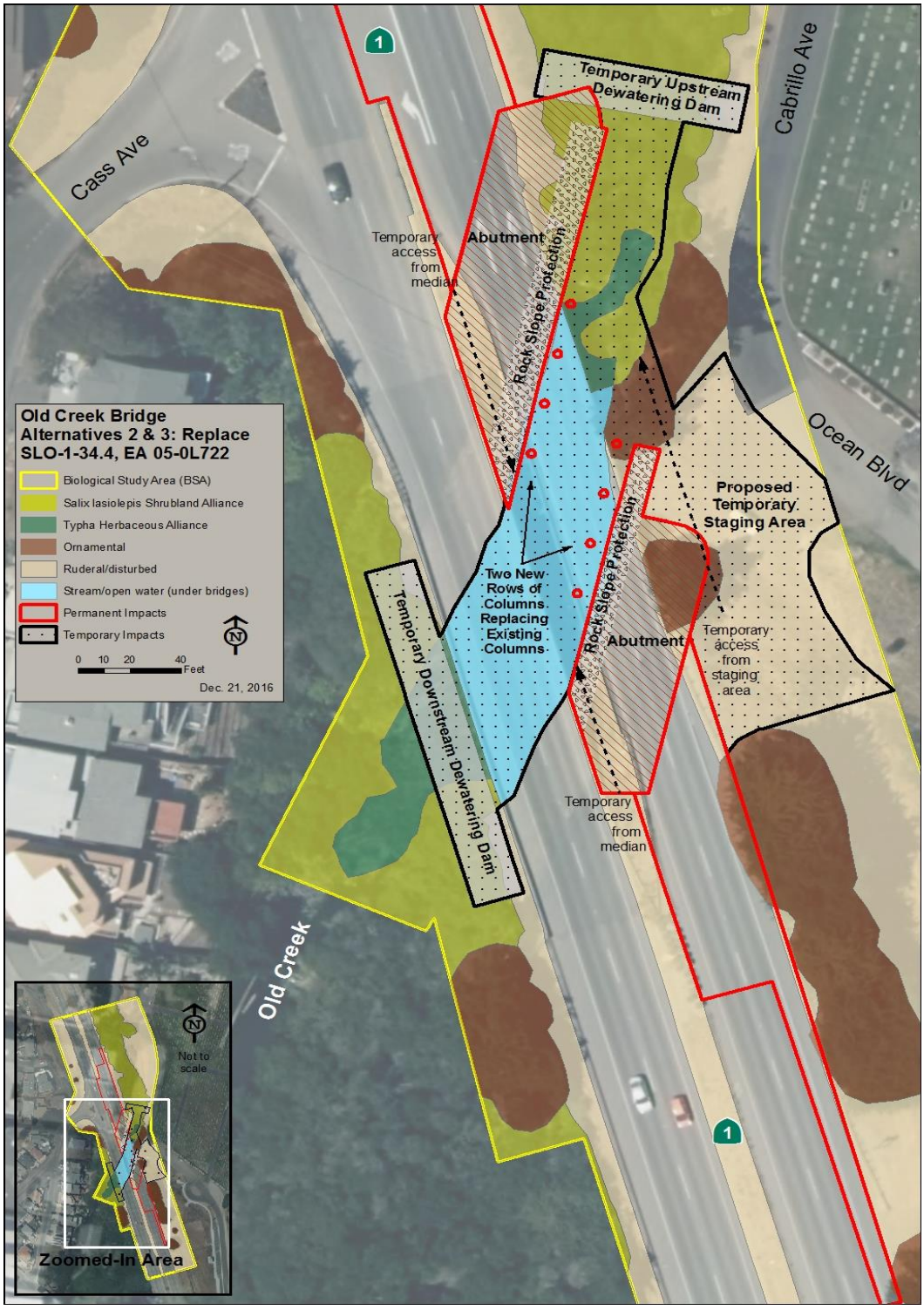


Figure 2-2 Biological Study Area and Project Area Map for Alternatives 2 & 3

Avoidance, Minimization, and/or Mitigation Measures

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

Measures would be implemented to avoid/minimize the spread of invasive species throughout the BSA. (See Section 2.3.6 Invasive Species)

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 U.S. Code 1344), is the main law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/ inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into

the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this Executive Order states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB) and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Wildlife before beginning construction. If the California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for additional details.

Affected Environment

Old Creek is the outlet from nearby Whale Rock Reservoir, located approximately 0.68 mile (straight-line distance) north of the BSA. The reservoir was formed by the building of Whale Rock Dam on Old Creek, which was completed in 1961. From Whale Rock Dam, water is released to Old Creek, which flows or ponds perennially and roughly north to south proceeding through the southern section of Cayucos and just west of Cayucos-Morro Bay District Cemetery through the vicinity of the BSA before forming a lagoon at

the Pacific Ocean. The wetted portion of Old Creek in the vicinity of the existing bridge varies from approximately 30 to 60 feet wide and supports fairly deep, relatively still open water. While the stretch of stream within the BSA is perennially inundated, it does not typically flow except during and after rain events. The slope of this stream reach is estimated at less than 1%. Average water depths were observed to range from 3 to 6 feet in the vicinity of the bridge during field visits from 2013 and 2016, but water staining along the existing columns suggests water may get as deep as 8 feet during the wet season.

Wetlands, other waters, and riparian areas under the jurisdiction of U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW) and California Coastal Commission (CCC) will be impacted by the proposed project. Summaries of jurisdictional wetlands/waters and riparian habitat within the BSA and anticipated impacts are included in Table 2.

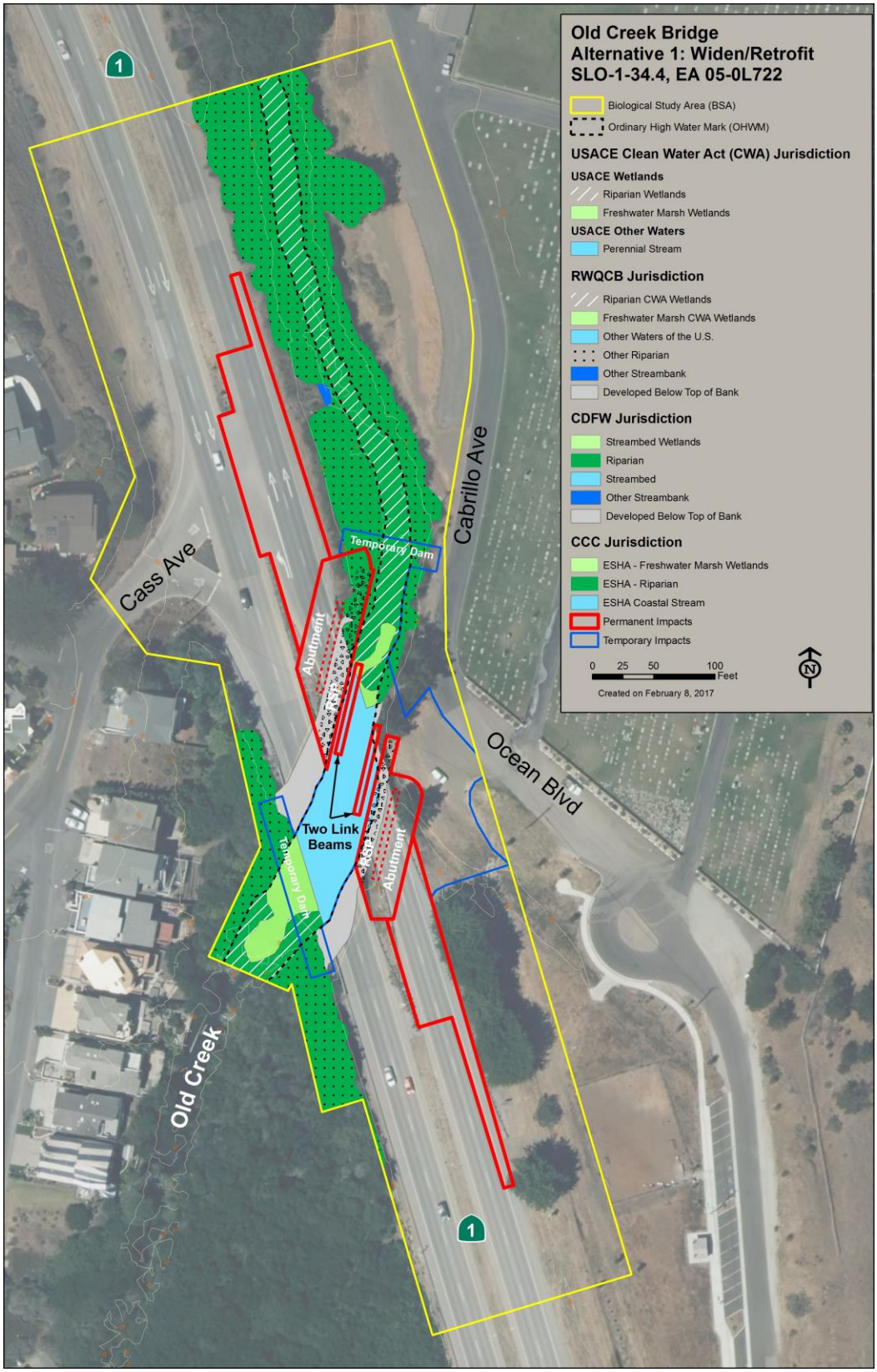


Figure 2-3 Jurisdictional Waters Impacts for Alternative 1

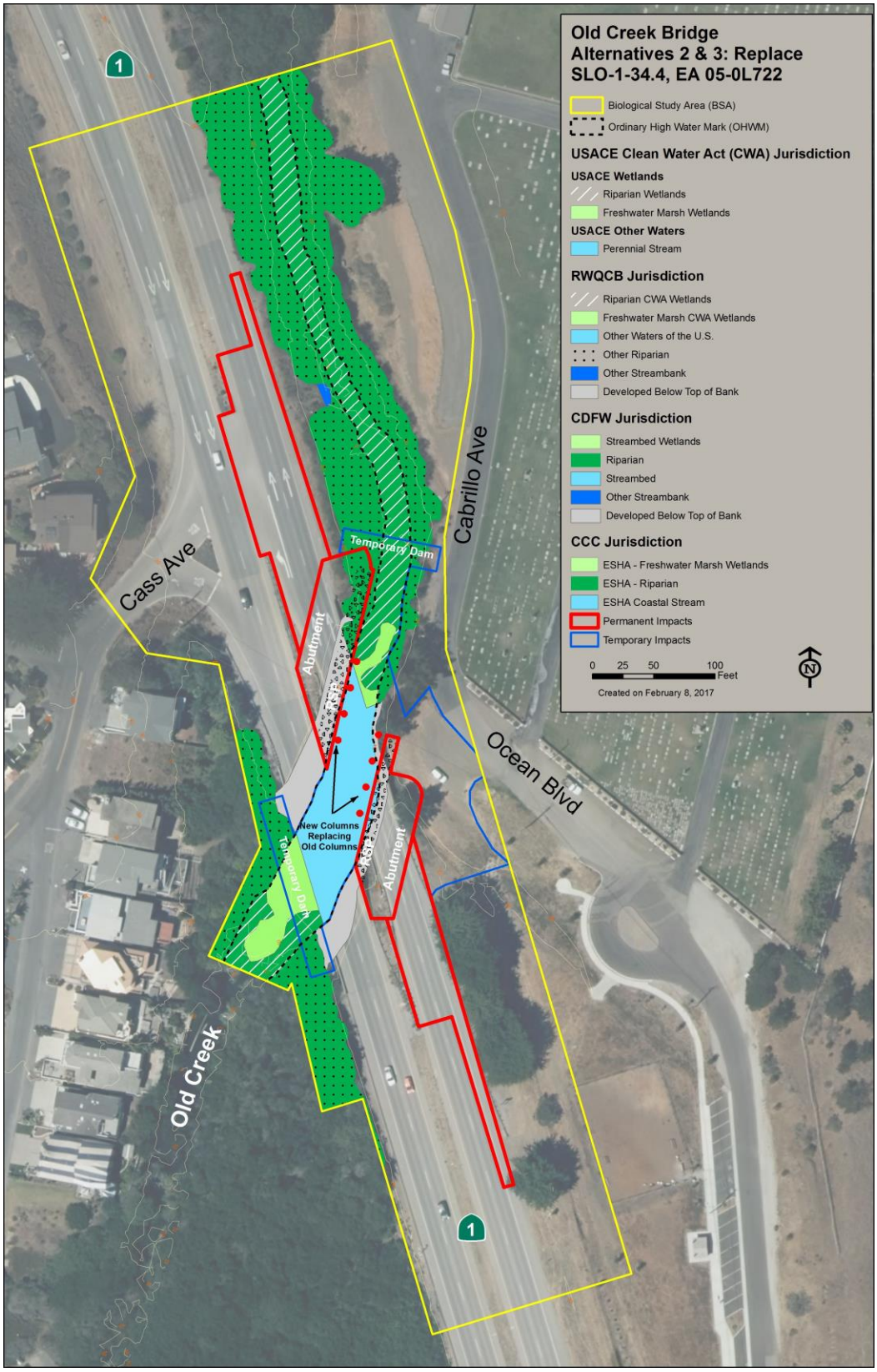


Figure 2-4 Jurisdictional Waters Impacts for Alternatives 2 and 3

Environmental Consequences

The impacts to jurisdictional waters along Old Creek would be of a relatively small scale. Estimates of permanent and temporary impacts to potential jurisdictional wetlands, other waters, and riparian habitat are presented in Figures 2-3 and 2-4. These impacts were determined by overlaying the project API with preliminary jurisdictional determination map prepared for the Jurisdictional Waters Assessment.

Permanent impacts to jurisdictional waters would result from installation of new abutments, new RSP, and new columns

Temporary impacts would occur in jurisdictional waters resulting from temporary diversion/dewatering, vegetation trimming, drainage ditch realignment, and equipment access/foot traffic throughout the work area.

Taking into consideration the permanent and temporary impacts, the quantities of these jurisdictional areas within the BSA are expected to be closely comparable to pre-construction conditions.

Regional Water Quality Control Board Jurisdiction

A total of 1.47 ac falls within RWQCB jurisdiction. This includes 0.280 ac of riparian CWA wetlands, 0.074 ac of freshwater marsh CWA wetlands, 0.165 ac of CWA other waters, 0.825 ac of "other riparian" habitat (which occurs above the OHWM), 0.003 ac of "other streambank" (lacking riparian vegetation), and 0.123 ac of area below the bridge and below the bank that is developed (i.e., supports sacked concrete/RSP). This reflects the findings of the field investigation for this Jurisdictional Waters Assessment and may be subject to final verification by RWQCB.

California Department of Fish and Wildlife Jurisdiction

A total of 1.47 ac falls within CDFW jurisdiction. This includes 0.074 ac of streambed wetlands, 1.105 ac of riparian habitat, 0.165 ac of streambed (unvegetated), 0.003 ac of other streambank, and 0.123 ac of area below the bridge and below the bank that is developed. This reflects the findings of the field investigation for this Jurisdictional Waters Assessment and may be subject to final verification by CDFW.

California Coastal Commission

A total of 1.344 ac qualifies as ESHA under the jurisdiction of CCC. This includes 1.105 ac of riparian ESHA, 0.074 ac of freshwater marsh wetland ESHA, and 0.165 ac of coastal stream ESHA. This reflects the findings of the field investigation for this Jurisdictional Waters Assessment and is subject to final verification by CCC.

Permits for the project will be required from USACE (Section 404 Nationwide Permit), CDFW (Section 1602 Streambed Alteration Agreement) and RWQCB (Section 401 Certification for impacts to Waters of the U.S.).

Avoidance, Minimization, and/or Mitigation Measures

The impacts to jurisdictional waters along Old Creek would be of a relatively small scale. Compensatory mitigation is proposed at a 1:1 ratio (acreage) for temporary impacts and at a 3:1 ratio (acreage) for permanent impacts to riparian and freshwater marsh vegetation via restoration (reestablishment).

Prior to any ground-disturbing activities, Environmentally Sensitive Area fencing shall be installed around jurisdictional waters, coastal zone ESHAs, and the dripline of trees to be protected within project limits. Caltrans-defined Environmentally Sensitive Areas shall be noted on design plans and delineated in the field prior to the start of construction activities.

During construction, all project-related hazardous materials spills within the project site shall be cleaned up immediately. Readily accessible spill prevention and cleanup materials shall be kept by the contractor on-site at all times during construction.

During construction, erosion control measures shall be implemented. Silt fencing, fiber rolls, and barriers shall be installed as needed between the project site and jurisdictional other waters and riparian habitat. At a minimum, erosion controls shall be maintained by the contractor on a daily basis throughout the construction period.

During construction, the cleaning and refueling of equipment and vehicles shall occur only within a designated staging area. This area shall either be a minimum of 100 feet from aquatic areas or, if the area is less than 100 feet from aquatic areas, the area must be surrounded by barriers (e.g. fiber rolls or equivalent). The staging areas shall conform to Best Management Practices (BMPs) applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles shall be checked and maintained by the contractor on a daily basis to ensure proper operation and avoid potential leaks or spills.

Stream contours shall be restored as close as possible to their original condition.

Compensatory mitigation is proposed at a 1:1 ratio (acreage) for temporary impacts and at a 3:1 ratio (acreage) for permanent impacts to riparian and freshwater marsh vegetation via restoration (reestablishment).

Replacement plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan and the final MMP. The MMP will be developed in coordination with a Caltrans biologist and will include developed planting specifications and grading plans to ensure survival of planted vegetation and re-establishment of functions and values. The final MMP will detail mitigation commitments and be consistent with standards and mitigation requirements from the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. The MMP 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 would be on-site and in-kind and consist mainly of native riparian species such as arroyo willow and associated understory such as California blackberry, and freshwater marsh emergent vegetation such as cattail.

2.3.3 Plant Species

Regulatory Setting

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section 2.3.5 in this document for detailed information about these species.

This section of the document discusses all the other special-status plant species, including California Department of Fish and Wildlife species of special concern, U.S. Fish and Wildlife Service candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for Federal Endangered Species Act can be found at U.S. Code 16, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. The regulatory requirements for the California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, CA Public Resources Code, Sections 2100-21177.

Affected Environment

A Natural Environmental Study (NES) was completed for the project in March 2017.Botanical surveys were conducted within the BSA in March, May, and July 2013 and again in March and May 2016. While potential habitat occurs within the BSA for several taxa, none of these taxa were observed within the BSA during botanical surveys and none are anticipated to occur. The California seablite is known to occur several hundred feet downstream from the biological study area near the mouth of Old Creek, but no salt marsh conditions are present in the biological study area and this species is not expected to occur. No federally designated critical habitat for federally listed plant species occurs within the BSA.

Environmental Consequences

The proposed project is not anticipated to impact any special-status plant species. The Federal Endangered Species Act Section 7 effects determination is that the proposed project will have no effect on the marsh sandwort, California jewelflower, San Luis Obispo fountain thistle, salt marsh bird's-beak, spreading navarretia, and California seablite.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance/minimization measures are required.

2.3.4 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.4.5. All other special-status animal species are discussed here, including California fully protected species and species of special concern, and U.S. Fish and Wildlife Service or NOAA Fisheries Service candidate species. Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

The NES (April 2017) provided information on special-status species that have the potential to occur or are known to occur within the BSA.

Special-status species have the potential to occur within the project footprint: San Luis Obispo pyrg, south-central California coast steelhead trout, California red-legged frog, Western Pond Turtle, two-striped garter snake, southwestern willow flycatcher, yellow-breasted chat, American yellow warbler, pallid bat, Townsend's big-eared bat, Fringed myotis, and Yuma myotis.

Table 4 Special Status Species Known to Occur or With the Potential to Occur Within the Biological Study Area

Common Name	Status	Presence
1. San Luis Obispo Pyrg	Included on CNDDB Special Animals List	Suitable Habitat
2. South-Central California Coast Steelhead Trout	State Species of Special Concern; Federally Threatened	Suitable Habitat
3. Tidewater goby	State Species of Special Concern; Federally Threatened	Suitable Habitat
4. California Red-Legged Frog	State Species of Special Concern; Federally Threatened	Suitable Habitat; Inferred Presence
5. Western Pond Turtle	State Species of Special Concern	Suitable Habitat; Inferred Presence
6. Two-Striped Garter Snake	State Species of Special Concern	Suitable Habitat
7. Southwestern Willow Flycatcher	State Endangered; Federally Endangered	Marginal Habitat
8. Yellow-breasted Chat	State Species of Special Concern	Suitable Habitat
9. American Yellow Warbler	State Species of Special Concern	Suitable Habitat
10. Pallid Bat	State Species of Special Concern	Marginal Habitat
11. Townsend's Big-Eared Bat	State Species of Special Concern	Marginal Habitat
12. Least Bell's vireo	State Endangered; Federally Endangered	Marginal Habitat
13. Fringed myotis	State Species of Special Concern	Marginal Habitat
14. Yuma Myotis	State Species of Special Concern	Marginal Habitat

Discussion of Western Pond Turtle (Emys marmorata), Two-striped Garter Snake (Thamnophis hammondii) and San Luis Obispo Pyrg (Pyrgulopsis taylori)

The western pond turtle, two-striped garter snake and the San Luis Obispo Pyrg have been addressed together because they have similar habitat requirements, potential project-related impacts, and avoidance and minimization measures.

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

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

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

The two-striped garter snake is considered a California Species of Special Concern. It is a medium-sized garter snake with a variable dorsal coloration of olive, brown, or brownish gray, with a single yellow-orange lateral stripe on each side of the body. There is no dorsal stripe, and the ventral surface is pale cream-colored to salmon, becoming white toward the throat.

The two-striped garter snake occurs mainly along Coast Range streams from Monterey south to Baja California. An extremely aquatic species, this snake uses water for both predation and escape from predators. Its habitat includes perennial and intermittent streams with rocky substrate bordered by dense vegetation. The species is infrequently found in streams or stock ponds lacking dense riparian vegetation along the banks. It is generally found near streams or stock ponds in the summer and occupies upland coastal sage scrub and grassy locations near its summer range in the winter.

During the day, the two-striped garter snake often basks on streamside rocks or on densely vegetated stream banks. In milder areas, mammal burrows and surface objects such as rocks and rotting logs serve as winter refuges. Two-striped garter snakes may also overwinter in small mammal burrows. Females are live-bearing, and approximately 4 to 36 young are born in the summer.

The San Luis Obispo pyrg is an aquatic snail species included on the California Natural Diversity Database Special Animals List. Very little published information exists regarding this invertebrate species. The genus Pyrgulopsis occurs throughout parts of eastern and western America and northern Mexico and is a major faunal element of North American freshwaters.

The California Natural Diversity Database indicates the San Luis Obispo pyrg occurs in freshwater habitats in San Luis Obispo County, with the nearest occurrence record along an "unnamed spring tributary to Morro Creek, N (W) side of Hwy 41" approximately 6.5 miles northeast of Morro Bay. *Pyrgulopsis* is a genus of freshwater snails with a gill and

an operculum. Generic characteristics of the genus *Pyrgulopsis* include a minute shell that is conically turreted, somewhat elongated, imperforate, and having a single ridge or keel; the apex is acute and the aperture is ovate.

Discussion Yellow-breasted Chat (Icteria virens), American Yellow Warbler (Setophaga petechia).

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

The yellow-breasted chat is considered a Species of Special Concern. It is distributed throughout the United States and is an uncommon summer resident of the coast and Sierra Nevada foothills of California. Preferred habitat for cover, foraging, and nesting consists of willow riparian thickets with dense understory cover. Its breeding season peaks in June. Eggs are incubated for 11 to 15 days, and chicks fledge eight to 11 days thereafter.

The American yellow warbler is considered a Species of Special Concern. It is a small migratory bird broadly distributed throughout North America, though its California distribution is largely restricted to northern and coastal areas and the Sierra Nevada foothills. Yellow warblers spend the breeding season in thickets and other disturbed habitats, particularly along streams and wetlands. Breeding and nesting of the yellow warbler typically occurs from mid-April to early August, with peak activity occurring in June. Eggs are incubated for approximately 11 days, and young fledge approximately nine to 12 days thereafter.

Discussion of Pallid Bat (Antrozous pallidus), Townsend's Big-eared Bat (Corynorhinus townsendii), Fringed Myotis (Myotis thysanodes) and Yuma Myotis (Myotis yumanensis)

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

The pallid bat is considered a Species of Special Concern by the California Department of Fish and Wildlife. Pallid bats range over much of the western United States, from central Mexico to British Columbia. They are found throughout California, especially in lowland areas below 6,400 feet. Pallid bats are apparently not migratory, but make local, seasonal movements. This nocturnal species resides in colonies consisting of a dozen to over 100 individuals. Pallid bats roost in deep crevices, caves, mines, rock faces, bridges and buildings. Like many bat species, pallid bats maintain both day and night roosts. Night roosts are used for feeding and are typically a quarter mile from the day roosts, which are used for sleeping. Their main food source is ground-dwelling insect species, including crickets, grasshoppers, beetles, and centipedes. They maintain nursery colonies with 30 to over 100 individuals. Females have one to two pups for each pregnancy, usually born between mid to late June. Pallid bats commonly establish day, maternity, and night roosts on bridges.

The Townsend's big-eared bat is considered a Species of Special Concern by the California Department of Fish and Wildlife and was at one time considered a candidate for state listing as threatened, but the California Fish and Game Commission determined that listing was not warranted on October 25, 2016. The Townsend's big-eared bat requires caves, mines, tunnels, buildings, or other human-made structures for roosting. It may use separate sites for night, day, hibernation, or maternity roosts. Trees are not typically used for roosting. Maternity roosts are the most important limiting resource and are found in caves, tunnels, mines, and buildings. Small clusters or groups (usually fewer than 100 individuals) of females and young form the maternity colony. Maternity roosts are in relatively warm sites. Most mating occurs from November to February. Births occur in May and June, peaking in late May. This species is extremely sensitive to disturbance of roosting sites. A single visit may result in abandonment of the roost. Numbers reportedly have declined steeply in California. Townsend's big-eared bats occasionally establish day, maternity, and night roosts on bridges.

The fringed myotis is included on the California Natural Diversity Database Special Animals List. While this species is widespread in California, its abundance is irregular; it may be locally common in certain areas. Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer forests at 4,000 to 7,000 feet. The fringed myotis roosts in caves, mines, buildings, and crevices. Separate day and night roosts may be used. Mating occurs in the fall, and the young are born from May through July, but most are born in late June. The fringed myotis occasionally establishes day, maternity, and night roosts on bridges.

The Yuma myotis is included on the California Natural Diversity Database Special Animals List. This species is common and widespread in California. Optimal habitats are open forests and woodlands with sources of water over which to feed. The Yuma myotis roosts in buildings, mines, caves, or crevices. It mates in the fall and birth of pups occurs in late May to mid-June with a peak in early June. It is likely that some young are born in July in some areas. The Yuma myotis commonly establishes day, maternity, and night roosts on bridges.

Environmental Consequences

Western Pond Turtle, Two-striped Garter Snake and San Luis Obispo Pyrg

No two-striped garter snakes were observed in the Old Creek BSA during surveys. There are California Natural Diversity Database occurrence records for the western pond turtle along Old Creek (CNDDB 2016), and several western pond turtles were observed during different site visits basking on a log a few hundred feet downstream of the biological study area. Western pond turtles are anticipated to inhabit the BSA. Despite a lack of California Natural Diversity Database records for two-striped garter snake (CNDDB 2016), marginal habitat in the biological study area is present for this species.

Project construction could result in the injury or mortality of the western pond turtle and/or two-striped garter snake (if present) during dewatering of Old Creek. The potential need to capture and relocate these species 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. Erosion and sedimentation could also occur, which could directly or indirectly affect water quality.

Western pond turtles have been observed downstream of the biological study area and have the potential to occupy instream habitat within the "bowl/basin" under the existing bridge. The potential for impacts to the two-striped garter snake is anticipated to be low due to no observations of the species within the biological study area during surveys, but this potential could change through time, where the species could potentially expand populations or colonize the corridor.

San Luis Obispo Pyrg

No Pyrgulopsis species were observed during surveys of Old Creek but, based on the literature, this drainage appears to support suitable habitat. There is a potential for presence of the San Luis Obispo pyrg along Old Creek, with an estimated low likelihood for occurrence based on no nearby California Natural Diversity Database records and no observations during surveys.

Project construction could result in the injury or mortality of the San Luis Obispo pyrg (if present) during dewatering to accommodate the bridge improvements. The potential need to capture and relocate this species could subject individual snails to stresses (e.g., temporary removal from aquatic habitat, dessication, relocation to unfamiliar aquatic habitat) that could result in adverse effects. Injury or mortality could also occur via accidental crushing by worker foot-traffic or construction equipment. The potential for these impacts is anticipated to be low due to no observations of the species within the biological study area during surveys and no known California Natural Diversity Database occurrences for the species along Old Creek (CNDDB 2016).

Yellow-breasted Chat, American Yellow Warbler, and Other Nesting Birds

None of the special-status bird species previously described were observed during reconnaissance surveys of the biological study area. Common birds observed included species such as the American cliff swallow (Petrochelidon pyrrhonota), song sparrow (Melospiza melodia), American crow (Corvus brachyrhynchos), California towhee (Melozone crissalis), western scrub jay (Aphelocoma californica), and black phoebe (Sayornis nigricans). Several inactive American cliff swallow mud nests were observed under Old Creek Bridge, but no other nesting birds or nesting bird behaviors were observed during surveys. Potential nesting habitat for bird species occurs in trees and under the existing bridge within the biological study area.

Caltrans typically anticipates the bird nesting season to occur from February 15 to September 1. The removal of vegetation and/or the existing bridge could directly impact active bird nests and any eggs or young residing in nests. Indirect impacts could also result from noise and disturbance associated with construction, which could alter perching, foraging, and/or nesting behaviors. While temporary loss of vegetation supporting potential nesting habitat could occur, this would be 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.

Pallid Bat, Townsend's Big-eared Bat, Fringed Myotis and Yuma Myotis

The pallid bat was directly observed night-roosting under the southbound bridge, and it is possible that various bat species may use both the southbound and northbound bridges at least periodically for night roosting. Direct impacts to bats could result during removal of the existing bridge and/or trees if bats are found to be roosting in these areas. These direct effects could result in the injury or mortality of bats or harassment that could alter roosting behaviors. Indirect impacts could also result from noise and disturbance associated with construction, which could also alter roosting behaviors.

The implementation of bat exclusion measures from the bridge, pre-activity surveys, and exclusion zones will reduce the potential for adverse effects to roosting bat species. If the bridge is widened, potential spaces for bat roosting under the existing bridge will remain preserved. If the bridge is replaced, available roosting habitat (if present) under the existing bridge or in trees requiring removal will be temporarily impacted, but eventually replaced with construction of the new bridge and planting of new trees as mitigation.

Avoidance, Minimization, and/or Mitigation Measures

Western Pond Turtle, Two-striped Garter Snake and San Luis Obispo Pyrg

1. Prior to initiation of stream dewatering, Caltrans shall conduct an informal worker environmental training program including a description of the western pond turtle and two-striped garter snake, their legal/protected status, proximity to the project site, and avoidance/minimization measures to be implemented during the project.

2. Prior to construction, a biologist determined qualified by Caltrans shall survey the Area of Potential Impact and, if present, capture and relocate any western pond turtles or two-striped garter snakes to suitable habitat downstream of the Area of Potential Impact. Observations of Species of Special Concern or other special-status species shall be documented on California Natural Diversity Database forms and submitted to the California Department of Fish and Wildlife upon project completion. If these species or other Species of Special Concern aquatic species are observed during construction, they will likewise be relocated to suitable habitat outside of the impact area by a qualified biologist.

San Luis Obispo Pyrg

1. During pre-construction surveys and/or during construction, if biologists observe any Pyrgulopsis spp., the species will be relocated to suitable aquatic habitat outside of the area of impact.

Yellow-breasted Chat, American Yellow Warbler, and Other Nesting Birds

1. If feasible and regulatory approvals allow, tree removal shall be scheduled to occur from September 2 to February 14, 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 15 to September 1), 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. It is recommended that birds be excluded from the existing bridge prior to its demolition. Nesting bird exclusion methods may include installation of exclusion netting, removing/knocking down nests before they contain eggs, or other methods approved by CDFW. Installation of exclusion netting shall occur outside of the typical nesting season (i.e., implement exclusion methods from September 2 to February 14).

Pallid Bat, Townsend's Big-Eared Bat, Fringed Myotis and Yuma Myotis

1. It is recommended that bats be passively excluded from the existing bridge with exclusion netting prior to its demolition. Installation of exclusion netting shall occur outside of the typical maternity roosting season (i.e., implement exclusion from September 2 to February 14).

2. If tree removal is required during the bat maternity roosting season (February 15 to September 1), a bat roost survey shall be conducted by a qualified biologist within three (3) days prior to removal. If an active bat roost is found, Caltrans shall coordinate with the California Department of Fish and Wildlife to determine an appropriate buffer based on the habits and needs of the species. Readily visible exclusion zones shall be established in areas where roosts must be avoided using Environmentally Sensitive Area fencing. Work in the buffer area shall be avoided until a qualified biologist has determined that roosting activity has ceased. Active bat maternity roosts shall not be disturbed or destroyed at any time.

Compensatory Mitigation

Because the existing bridge may potentially support roosting bats, if the bridge replacement alternative is selected and does not support features conducive to bat roosting (e.g., crevices, cavities, joints), replacement roost features per Erickson et al. (2000) will be incorporated into the new bridge as mitigation (e.g., add-on panels, add-on collars, capped edge drains, and/or bat houses). The size, materials, and positioning of these features will be agreed upon via collaboration with Caltrans Design and a qualified biologist. Impacts to vegetation would be offset by replacement plantings within the project limits, which will also replace potential roosting habitat.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal

Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife.

For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

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

Affected Environment

The following information came from the Natural Environment Study (March 2017) prepared for the project.

Five federally listed animal species have the potential to occur within the project footprint: California Coast Steelhead (Oncorhynchus mykiss irideus), Tidewater Goby (Eucyclogobius newberryi), Least Bell's Vireo (Vireo bellii pusillus) and Southwestern Willow Flycatcher (Empidonax traillii extimus).

Consultation with National Marine Fisheries Service (NMFS) will be necessary for California Coast steelhead trout and South-Central California steelhead trout critical habitat.

It was determined that the project qualified for a Programmatic Biological Opinion for the California red-legged frog for the purpose of USFWS formal consultation

Discussion of South-Central California Coast Steelhead Trout (Oncorhynchus mykiss irideus)

Steelhead trout are the anadromous (ocean-going) form of rainbow trout. Adults spawn in freshwater, and juveniles rear in freshwater before out-migrating to the ocean to mature and returning to freshwater as adults to reproduce. Steelhead trout historically ranged from Alaska southward to the California-Mexico border and were the only abundant salmonid species that occurred naturally within the coast ranges of Southern California. With the rise of the human population in Southern California in the 20th century and the associated land and water development within coastal drainages (mainly dams and water diversions), steelhead trout numbers quickly declined, leading to extirpated populations in many watersheds and sporadic and remnant populations in the remaining watersheds.

The south-central coast steelhead trout evolutionarily significant unit (ESU) was listed as threatened on August 18, 1997. The original ESU boundaries during the first listing of 1997 were from the Pajaro River (Monterey County) south to (but not including) the Santa Maria River (San Luis Obispo County). During the time between the initial listing and a subsequent re-listing in 2006, the National Marine Fisheries Service adopted the "distinct population segment" (DPS) designation for steelhead trout to replace the ESU designation to be consistent with the listing policies and practices of the U.S. Fish and Wildlife Service (NMFS 2012). The south-central California coast steelhead trout DPS is also considered a California Species of Special Concern (SSC) by the California Department of Fish and Wildlife.

The National Marine Fisheries Service refers to the listed steelhead trout as *Oncorhyncus* mykiss, while the California Department of Fish and Wildlife prefers the taxonomy to the subspecific rank by recognizing the coastal rainbow trout as *Oncorhyncus mykiss irideus*. For the purposes of this document, either scientific name is considered synonymous with the federally listed south-central coast steelhead trout.

Discussion of Tidewater Goby (Eucyclogobius newberryi)

The tidewater goby is a small (rarely more than 2 inches long), gray-brown, salt-tolerant fish. It is a federally endangered species and is considered a California Species of Special Concern. The species is endemic to coastal lagoons, estuaries, and backwater marshes of California; very few tidewater goby have ever been captured in the marine environment,

and it is believed this species rarely occurs in the open ocean. It historically occurred in at least 87 California coastal lagoons from San Diego County to Humboldt County, but has disappeared from most of these sites. Many populations are isolated along the California coast by open ocean and are subject to intermittent extirpations; those populations with other nearby populations are able to be recolonized.

Discussion of California Red-legged Frog (Rana draytonii)

The California red-legged frog is federally threatened and considered a California Species of Special Concern. It is recognized by the reddish color that forms on the underside of its legs and belly and the presence of a side-back fold. The California red-legged frog historically ranged from Marin County southward to northern Baja California. 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 27.6 inches, and the presence of fairly sturdy underwater supports such as cattails. The largest densities of this species are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation.

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.

Discussion of

The southwestern willow flycatcher is a federal and state endangered species. Federal critical habitat has been designated for the species, but not within the biological study area. The southwestern willow flycatcher is one of several subspecies of the willow flycatcher, three of which occur in California. The southwestern willow flycatcher is generally paler than other willow flycatcher subspecies, and also differs in morphology.

The historical breeding range of the southwestern willow flycatcher included Southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico. The current range is similar to the historical range, but the quantity of suitable habitat is heavily reduced from historical levels. The southwestern willow flycatcher occurs from near sea level to over 8,500 feet, but is primarily found in lower elevation riparian habitats. In Santa Barbara County, it is known to occur along the Santa Ynez River system. The southwestern willow flycatcher usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil.

General unifying characteristics of flycatcher habitat can be identified, in which occupied sites usually consist of dense vegetation in the patch interior, or an aggregate of dense patches interspersed with openings. In most cases, this dense vegetation occurs within the first 10 to 13 feet above ground. These dense patches are often interspersed with small

openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. Nest sites typically have dense foliage from the ground level up to approximately 3 feet above ground, though dense foliage may exist only at the shrub level or as a low dense canopy.

Southwestern willow flycatchers typically arrive on breeding grounds between early May and early June. Male flycatchers generally arrive first at a breeding site, establish territories, and females arrive a week or two later. The flycatcher builds a small open cup nest, constructed of leaves, grass, fibers, feathers, and animal hair; coarser material is used in the nest base and body, and finer materials in the nest cup (Bent 1960). Nests are approximately 8 cm and have 2 to 15 cm (1-6 in) of loose material dangling from the bottom (or none, in tamarisk-dominated habitats) (USFWS 2002b). Typical placement is in the fork of small-diameter (e.g., 0.4-inch), vertical or nearly vertical branches (USFWS 2002b). Females typically lay one egg per day, until the nest contains 3 or 4 eggs. Incubation lasts 12 to 13 days. Nestlings fledge 12 to 15 days after hatching. Fledglings stay close to the nest and each other for 3 to 5 days. Insects are typical food items.

Discussion of Least Bell's Vireo (Vireo bellii pusillus)

The least Bell's vireo is a federal and state endangered species. Federal critical habitat has been designated for this bird species, but not within the BSA. The least Bell's vireo subspecies is the grayest of the four subspecies, and is about 4 inches long with a 7-inch wingspan.

Historically, the 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 of listing in 1986, the least Bell's vireo had been extirpated from most of its historic range. Populations were confined to eight counties south of Santa Barbara, with most 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.

Least Bell's vireos require 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 3 to 6 feet of the ground, where nests are typically placed; and, 2) a dense, stratified canopy, which is needed for foraging.

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 and bound at the rim. Females typically lay clutches of two to four eggs, and incubation takes 14 days. Nestlings fledge 10 to 12 days after hatching. Their main diet is insects.

The species described above are each protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3503. In addition, numerous other nesting bird species protected by these two regulatory laws have the potential to nest in habitats within the biological study area.

Environmental Consequences

South-Central California Coast Steelhead Trout

Although no steelhead trout were observed during surveys along Old Creek, no intensive survey methods (e.g., snorkel surveys, seine-netting, or dip-netting) were conducted. In a 1992 memo, the California Department of Fish and Game (now the California Department of Fish and Wildlife) reported that the only use of this area by steelhead trout occurs on the rare years that the reservoir spills, where straying steelhead trout may enter the creek mouth and migrate upstream to the base of the dam; lack of spawning gravels prevent any successful reproduction during these events (cited in Becker and Reining 2008 as "DFG 1992a"). A 1998 National Marine Fisheries Service letter indicated that steelhead trout spawned in Old Creek downstream from the dam (cited in Becker and Reining 2008 as "NMFS 1998"). While it has been reported that it is unknown if adult steelhead trout still enter Old Creek below Whale Rock reservoir, the possibility cannot be discounted, especially during particularly wet years when steelhead trout could potentially have access from the Pacific Ocean, to habitat through the biological study area, upstream to the dam.

While the habitat quality along Old Creek can be characterized as low, taking a conservative approach, based on the best available information and the relative uncertainty as to whether steelhead trout persist along Old Creek south of Whale Rock Dam, steelhead trout presence is inferred within the biological study area at Old Creek with an estimated low likelihood for presence.

There are no fish passage barriers within the biological study area. According to the California Fish Passage Assessment Database (2016), there is a "Total Barrier" at Whale Rock Dam, approximately 1.25 miles (stream distance) upstream of the biological study area. Although instream vegetation can be dense in some areas, no apparent barriers were observable between the biological study area and areas upstream approaching the dam and stream habitat within the biological study area appears to allow for fish passage.

The bridge improvements at Old Creek will require dewatering, which would temporarily alter quality of aquatic habitat and result in a temporary loss of service for steelhead trout and other aquatic organisms. Dewatering and construction within Old Creek in areas occupied by steelhead trout could result in direct impacts to the species in the form of injury or mortality as steelhead trout stranded in residual wetted areas are captured, handled, and relocated. Removal of vegetation to allow for installation of temporary dewatering dams and temporary construction equipment access into the stream channel would somewhat affect shading and microhabitat temperature regulation characteristics, but these effects would be temporary as removed vegetation would be replaced by in-kind replantings within a relatively short timeframe (likely during the fall months following construction or sooner). Erosion and sedimentation could also occur, which

could directly or indirectly affect water quality. While the placement of cofferdams and dewatering within the wetted portions of Old Creek would result in a temporary loss of service of available habitat for steelhead trout, the extent and effect of this are estimated to be minor. These would consist mainly of temporary impacts to steelhead trout critical habitat of approximately 0.252 acre and a maximum of only 0.023 acre of permanent impacts (0.023 acre for Alternative 1; 0.008 acre net for Alternatives 2 and 3), along a 300-linear-foot section of stream. The act of dewatering and its eventual dismantling and restoration of normal flows could also produce direct or indirect effects that could impact the structure of the streambed substrate or increase turbidity. These impacts would likely be temporary and rectified once the pre-construction stream conditions are restored.

While the potential for steelhead trout presence is anticipated to be limited due to marginal habitat conditions in Old Creek from June to October (when instream work would occur), this potential for presence cannot be completely discounted due to opportunities for steelhead trout in-migration from the Pacific Ocean to Old Creek during the fall and winter months and the opportunities for juveniles (and even stranded adults) to occupy potential rearing habitat within the biological study area.

The Federal Endangered Species Act Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, the south-central California coast steelhead trout. The basis for this determination is that steelhead trout presence has been inferred (based on the best available information) and there would be a potential for take of the species during dewatering activities, capture, and relocation. An unknown number of steelhead trout could be subjected to take, but the potential is anticipated to be low due to low-quality habitat conditions.

Tidewater Goby

Although no tidewater gobies were observed in Old Creek, no protocol surveys were conducted. A population of tidewater gobies in Old Creek was evidently extirpated by largemouth bass (*Micropterus salmoides*) in the late 1980s; however, tidewater gobies were again found during surveys in 2001 (USFWS 2005) and 2004 (CNDDB 2016).

Common features of tidewater goby habitat include shallow water with little to no flow and fine sediment such as sand, mud, or muddy gravel. The species tends to avoid currents and concentrate in slack-water areas. The tidewater goby is most commonly found in waters with relatively low salinities, but can tolerate a wide range of salinities, and is frequently found in coastal habitats with higher salinity. The tidewater goby also occurs in freshwater streams up-gradient and tributary to brackish habitats.

The Federal Endangered Species Act Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, tidewater goby. The basis for this determination is that tidewater goby presence has been inferred (based on the best available information) and there would be a potential for take of the species during dewatering activities, capture, and relocation. An unknown number of tidewater gobies could be subjected to take, but the potential is anticipated to be low due to low-quality habitat conditions.

Impacts to tidewater goby are similar to steelhead trout. Please refer to the Environmental Consequences information for steelhead trout.

California Red-legged Frog

No protocol surveys were conducted for the California red-legged frog, and the species was not observed during reconnaissance surveys. There are known occurrence records for California red-legged frog along Old Creek (CNDDB 2016), and presence within the biological study area is inferred.

Project construction could result in the injury or mortality of California red-legged frogs (if present) during dewatering of Old Creek. The potential need to capture and relocate California red-legged frogs would 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.

Electrofishing to assist in the capture and relocation effort of fish could subject California red-legged frog life stages (if present) to similar stresses described previously for steelhead trout, but the costs/risks (e.g., burns from electrofishing and other stresses) have been assessed as discountable based on the previously covered work of Allen and Reilly (2012).

Erosion and sedimentation could also occur, which could directly or indirectly affect water quality. While the placement of cofferdams and dewatering within the wetted portions of Old Creek would result in a temporary loss of aquatic habitat for the California red-legged frog, the extent and effect of this are estimated to be minor. These would consist mainly of temporary impacts to available stream habitat (not federally designated critical habitat) of approximately 0.252 acre and permanent impacts of 0.023 acre (also not critical habitat), along a 300-linear-foot section of stream. Only 0.014 acre of temporary impacts to upland critical habitat would occur. The potential for impacts to California red-legged frog are anticipated to be low due to no observations of the species within the biological study area during reconnaissance surveys, but this could change through time, where the species could potentially disperse and/or expand populations throughout the Old Creek corridor.

The Federal Endangered Species Act Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, the California red-legged frog. The basis for this determination is that the California red-legged frog has been inferred and there would be a low but possible potential for take of the species during dewatering activities and construction.

Least Bell's Vireo and Southwestern Willow flycatcher

While the southwestern willow flycatcher and least Bell's vireo appeared on the official U.S. Fish and Wildlife Service species list obtained for the proposed project, no protocol surveys were conducted for either taxa because both are anticipated to have a very low potential for occurrence in or near the biological study area. There are no known records for either the southwestern willow flycatcher or least Bell's vireo along Old Creek. Neither of these species were observed during reconnaissance surveys along Old Creek.

Because avoidance and minimization measures will be employed to protect all nesting bird species protected by the Federal Endangered Species Act, California Endangered Species Act, the Migratory Bird Treaty Act, and California Fish and Game Code, the Federal Endangered Species Act Section 7 effects determination is that the proposed project may affect, but is not likely to adversely affect, the least Bell's vireo and southwestern willow flycatcher.

The southwestern willow flycatcher and least Bell's vireo are also state listed taxa under the California Endangered Species Act, but because these taxa are not expected to be encountered during construction and measures will be implemented to avoid impacts to nesting birds, no California Endangered Species Act compliance will be required.

Avoidance, Minimization, and/or Mitigation Measures

South-Central California Coast Steelhead Trout

1. Prior to initiation of stream dewatering, a qualified biologist shall conduct an informal worker environmental training program including a description of steelhead trout, its legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating Federal Endangered Species Act and permit conditions.

2. During construction, instream work shall be limited to the low-flow period from June 1 and October 31 in any given year, when the surface water is likely to be at seasonal minimum and to avoid adult steelhead trout spawning migration and peak smolt emigration. Deviations from this work window shall be made only with permission from Caltrans and the relevant regulatory/resource agencies.

3. During instream work, a qualified biologist shall be retained with experience in steelhead trout biology and ecology, aquatic habitats, biological monitoring (including dewatering), and capturing, handling, and relocating fish species. During instream work, the biological monitor(s) shall continuously monitor placement and removal of any dewatering system to capture stranded steelhead trout and other native fish species and relocate them to suitable habitat as appropriate. The biologist(s) shall capture steelhead trout stranded as a result of dewatering and relocate steelhead trout to suitable instream habitat immediately downstream of the work area, using methods approved by the appropriate regulatory agencies. This may include, but not necessarily will be limited to: seine-netting, dip-netting, electrofishing, and providing aerated water in buckets for transport and ensuring adequate water temperatures during transport. The biologist shall note the number of steelhead trout observed in the affected area, the number of steelhead trout captured and relocated, and the date and time of the collection and relocation.

4. If electrofishing is authorized to capture and relocate steelhead trout, this activity must be conducted by National Marine Fisheries Service-approved biologists.

5. During instream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes shall be completely screened with no larger than 3/32-inch (2.38 mm) wire mesh to prevent steelhead trout and other sensitive aquatic species from entering the pump system. Pumped water will be directed through a silt filtration bag and/or into a settling basin allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area. The form and function of all pumps used during the dewatering activities shall be checked weekly, at a minimum, by a qualified biological monitor to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.

6. The biological monitor shall monitor erosion and sediment controls to identify and correct any conditions that could adversely affect steelhead trout or steelhead trout habitat. The biological monitor shall be granted the authority to halt work activity as necessary and to recommend measures to avoid/minimize adverse effects to steelhead trout and steelhead trout habitat.

7. Caltrans shall provide the National Marine Fisheries Service a written summary of work performed (including biological survey and monitoring results), Best Management Practices implemented (i.e., use of biological monitor, flagging of project areas, erosion and sedimentation controls) and supporting photographs. Furthermore, the documentation describing listed species surveys and re-location efforts (if appropriate) shall include name(s) of the Caltrans-approved biologist(s), location and description of area surveyed, time and date of survey, all survey methods used, a list and tally of all sensitive animal species observed during the survey, a description of the instructions/recommendations given to the applicant during the project, and a detailed discussion of capture and relocation efforts (if appropriate).

8. Sound-attenuating devices shall be used during pile driving, if feasible.

Tidewater Goby

In addition to the previously proposed measures, the following measures, including several adapted from U.S. Fish and Wildlife Service, will serve to further avoid or minimize impacts to tidewater goby within the Area of Potential Impact:

1. Prior to initiation of stream dewatering, Caltrans shall conduct an informal worker environmental training program including a description of tidewater goby, its legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating Federal Endangered Species Act and permit conditions.

2. During dewatering, any pumps used shall be fitted with an anti-entrapment device(s) to prevent tidewater gobies from being drawn into the pump or impinged on intake screening. As dewatering proceeds, the U.S. Fish and Wildlife Service-approved biologist(s) shall remove by hand or net all tidewater gobies

found and relocate them to suitable habitat downstream of the proposed project site.

3. A U.S. Fish and Wildlife Service-approved biologist shall remain on-site and observe for tidewater gobies and turbidity levels within the work areas during all creek dewatering activities, and shall capture and relocate tidewater gobies to suitable habitat as necessary.

4. If electrofishing is authorized to capture and relocate tidewater gobies, this activity must be conducted by U.S. Fish and Wildlife Service-approved biologists.

5. Caltrans shall provide the U.S. Fish and Wildlife Service a written summary of work performed (including biological survey and monitoring results), Best Management Practices implemented (i.e., use of biological monitor, flagging of project areas, erosion and sedimentation controls) and supporting photographs. Furthermore, the documentation describing listed species surveys and relocation efforts (if appropriate) shall include name(s) of the U.S. Fish and Wildlife Service-approved biologist(s), location and description of area surveyed, time and date of survey, all survey methods used, a list and tally of all sensitive animal species observed during the survey, a description of the instructions/ recommendations given to the applicant during the project, and a detailed discussion of capture and relocation efforts (if appropriate).

California Red-legged Frog

The proposed project qualifie for Federal Endangered Species Act 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 U.S. Fish and Wildlife Service-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

2. Ground disturbance shall not begin until written approval is received from the U.S. Fish and Wildlife Service that the biologist is qualified to conduct the work.

3. A U.S. Fish and Wildlife Service-approved biologist shall 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 shall be allowed sufficient time to move them from the site before work begins. The U.S. Fish and Wildlife Service-approved biologist shall 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 shall be in the same drainage to the extent practicable. Caltrans shall coordinate with

the U.S. Fish and Wildlife Service on the relocation site prior to the capture of any California red-legged frogs.

4. Before any activities begin on a project, a U.S. Fish and Wildlife Service-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall 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, with a qualified person on hand to answer any questions.

5. A U.S. Fish and Wildlife Service-approved biologist shall be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of habitat has been completed. After this time, Caltrans shall designate a person to monitor on-site compliance with all minimization measures. The U.S. Fish and Wildlife Service-approved biologist shall ensure this monitor receives the training outlined in measure 4 above and in the identification of California red-legged frogs. If the monitor or the U.S. Fish and Wildlife Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected in a manner not anticipated by Caltrans and the U.S. Fish and Wildlife Service during review of the proposed action, they shall notify the resident engineer immediately. The resident engineer shall resolve the situation by requiring that all actions that are causing these effects be halted. When work is stopped, the U.S. Fish and Wildlife Service shall be notified as soon as possible.

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

7. All refueling, maintenance and staging of equipment and vehicles shall occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat unless otherwise preapproved by the necessary agencies. The monitor shall ensure contamination of habitat does not occur during operations. Prior to the onset of work, Caltrans shall ensure that a plan is in place for prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

8. Habitat contours shall be returned to a natural configuration at the end of the project activities. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Caltrans determine that it is not feasible or modification of 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 shall be limited to the minimum necessary to achieve the project. Environmentally Sensitive Areas shall 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. Caltrans shall 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 degree 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 Caltrans and the U.S. Fish and Wildlife Service during project planning shall 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 completion, Caltrans shall implement Best Management Practices shall be implemented outlined in any authorizations or permits, issued under the authorities of the Clean Water Act received for the project. If Best Management Practices are ineffective, Caltrans shall attempt to remedy the situation immediately, in coordination with the U.S. Fish and Wildlife Service.

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

13. Unless approved by the U.S. Fish and Wildlife Service, water shall not be impounded in a manner that may attract California red-legged frogs.

14. A U.S. Fish and Wildlife Service-approved biologist shall permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkii*), and centrarchid fishes from the project area, to the maximum extent possible. The U.S. Fish and Wildlife Service-approved biologist shall be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

15. If Caltrans demonstrates 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 U.S. Fish and Wildlife Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Task Force shall be followed at all times.

17. Project sites shall be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials shall be used to the extent practicable. Invasive, exotic plants shall be controlled to the maximum extent practicable. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Caltrans determine that it is not feasible or practical.

18. Caltrans shall not use herbicides as the primary method to control invasive, exotic plants. However, if it is determined that the use of herbicides is the only feasible method for controlling invasive plants at a specific project site; it will implement the following additional protective measures for the California red-legged frog:

    a. Caltrans shall not use herbicides during the breeding season for the California red-legged frog;

    b. Caltrans shall conduct surveys for the California red-legged frog immediately prior to the start of herbicide use. If found, California red-legged frogs shall be relocated to suitable habitat far enough from the project area that no direct contact with herbicide would occur;

    c. Giant reed and other invasive plants shall 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 shall 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 shall be taken to ensure that no herbicide is applied to native vegetation;

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

    g. Foliar applications of herbicide shall not occur when wind speeds are in excess of 3 miles per hour;

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

i. Application of all herbicides shall be done by qualified Caltrans staff or contractors to ensure that overspray is minimized, that all applications is made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment shall 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, unless otherwise preapproved by the necessary agencies. Prior to the onset of work, Caltrans shall ensure that a plan is in place for a prompt and effective response to accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take.

Southwestern Willow flycatcher and Least Bell's Vireo

1. If feasible and regulatory approvals allow, tree removal shall be scheduled to occur from September 2 to February 14, 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 feet of potential habitat during the nesting season (February 15 to September 1), 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 and/or southwestern willow flycatcher are observed within 100 feet of the Area of Potential Impact during the course of construction, a qualified biologist shall implement an exclusion zone and work shall be avoided within the exclusion zone until the least Bell's vireo and/or southwestern willow flycatcher is located greater than 100 feet from project-related disturbance. If an active least Bell's vireo and/or southwestern willow flycatcher nest is observed within 100 feet of the Area of Potential Impact, all project activities shall immediately cease and Caltrans shall contact U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife within 48 hours. If required, Caltrans shall then initiate Federal Endangered Species Act Section 7 formal consultation with U.S. Fish and Wildlife Service and California Endangered Species Act coordination for the least Bell's vireo and/or southwestern willow flycatcher and implement additional measures as necessary.

2.3.6 Invasive Species

Regulatory Setting

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

Affected Environment

A total of 26 invasive plant species as identified by the online Cal-IPC California Invasive Plant Inventory Database (2016) were observed within the biological study area.

Table 5 - Plants Observed in the BSA Included in the California Invasive Plant Council's Invasive Plant Inventory

Common Name	Scientific Name	Cal-IPC Invasiveness Rating	Relative Density within the BSA
slender wild oat	*Avena barbata*	Moderate	Sparse
common wild oat	*Avena fatua*	Moderate	Sparse
black mustard	*Brassica nigra*	Moderate	Sparse
ripgut brome	*Bromus diandrus*	Moderate	Sparse
red brome	*Bromus madritensis* ssp. *rubens*	High	Sparse
Italian thistle	*Carduus pycnocephalus*	Moderate	Low/Moderate
Chilean sea fig	*Carpobrotus chilensis*	Moderate	Low/Moderate
poison hemlock	*Conium maculatum*	Moderate	Low/Moderate
Bermuda grass	*Cynodon dactylon*	Moderate	Sparse
rattail sixweeks grass	*Festuca myruros*	Moderate	Low/Sparse
Italian ryegrass	*Festuca perennis*	Moderate	Low/Sparse
sweet fennel	*Foeniculum vulgare*	High	Sparse
English ivy	*Hedera helix*	High	Sparse
bristly oxtongue	*Helminthotheca echioides*	Limited	Low
foxtail barley	*Hordeum murinum*	Moderate	Low/Sparse
burclover	*Medicago polymorpha*	Limited	Sparse
Bermuda buttercup	*Oxalis pes-caprae*	Moderate	Low
kikuyu grass	*Pennisetum clandestinum*	Limited	Low
fountaingrass	*Pennisetum setaceum*	Moderate	Moderate
Harding grass	*Phalaris aquatica*	Moderate	Sparse
English plantain	*Plantago lanceolata*	Limited	Low/Sparse
wild radish	*Raphanus sativus*	Limited	Sparse
castor bean	*Ricinus communis*	Limited	Sparse
curly dock	*Rumex crispus*	Limited	Sparse
Peruvian peppertree	*Schinus molle*	Limited	Sparse
milk thistle	*Silybum marianum*	Limited	Sparse

Environmental Consequences

Ground disturbance and other aspects of project construction (e.g., erosion control, landscaping) could potentially spread or introduce invasive species within the biological study area. The distribution of most invasive plant species is mostly sparsely scattered throughout the biological study area and most common in ruderal/disturbed areas along the edges of SR 1.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented:

1. During construction, Caltrans will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible.

2. Only clean fill shall be imported. When practicable, invasive exotic plants in the project site shall be removed and properly disposed. All vegetation removed from the construction site shall be taken to a certified landfill to prevent the spread of invasive species. If soil from weedy areas must be removed off-site, the top 6 inches containing the seed layer in areas with weedy species shall be disposed of at a certified landfill. Inclusion of any species that occurs on the Cal-IPC Invasive Plant Inventory in the Caltrans erosion control seed mix or landscaping plans for the project shall be avoided.

3. If necessary, wash stations on-site shall be established for construction equipment under the guidance of Caltrans in order to avoid/minimize the spread of invasive plants and/or seed within the construction area.

2.3.7 Construction Impacts

Affected Environment

Air Quality

The County is considered in non-attainment for California Ambient Air Quality Standards (CAAQS) for ozone and fine particulate matter (PM10). To meet these goals, a Clean Air Plan (CAP) will be developed that details how the district will attain the CAAQS.

The project would generate air pollutants during construction. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter (fine dust), and odors. The largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities.

The contractor will comply with emissions thresholds and follow Caltrans standard practices that pertain to air quality control. These conditions should effectively reduce

and control emissions impacts during construction. (Source: Air and Noise Report for Old Creek Bridge Replacement Project- February 2017).

Noise

Because the proposed project is not considered a Type I or Type II project, as it will not construct a highway on a new location, significantly change the alignment of the existing highway or involve construction of noise abatement on an existing highway with no changes to the highway capacity or alignment, it is not subject to Caltrans Traffic Noise Analysis Protocol.

Though it is not subject to noise analysis, this project may generate temporary construction-related noise impacts. Noise generated by construction activities will be intermittent and its intensity will vary depending on the construction activity.

Parks and Recreational Facilities

There are recreational opportunities throughout the SR 1 corridor in and near Cayucos. Just south of the proposed project is an enclosed dog park, called the Norma Rose Dog Park. Also, many bicyclists ride SR 1, and west of the highway are multiple accesses to Morro Bay and Cayucos beaches.

Pedestrian and Bicycle Facilities

Pedestrian and bicycle access across the bridge will be provided on the roadway shoulders.

Environmental Consequences

Air Quality

During construction, the proposed project will generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors during construction would cause occasional annoyance and complaints from nearby residences.

Noise

This project may generate temporary construction-related noise impacts. Noise generated by construction activities will be intermittent and its intensity will vary depending on the construction activity.

The Cayucos-Morro Bay District Cemetery is adjacent to Old Creek and may intermittently be effected by construction noise.

Parks and Recreational Facilities

The dog park may experience an increase in noise and dust at times during construction. There will be a 5-foot shoulder to accommodate bicycles during construction. During construction, there may be possible delays to access Cass Street, which leads to Morro Strand State Beach Day Use Area. After construction, wider shoulders will better accommodate bicyclists.

Pedestrian and Bicycle Facilities

Access will be temporarily and periodically closed during construction activities. Access control shall be provided to allow continued pedestrian and bicycle access across the bridge.

Avoidance, Minimization, and/or Mitigation Measures

Air Quality

The Caltrans Standard Specification sections pertaining to dust control and dust palliative application are required for all construction contracts and would effectively reduce and control construction-emission impact. The provisions of Caltrans Standard Specification Section 10 "Dust Control" and Section 14 "Air Pollution Control" require the contractor to comply with all California Air Resource Board and San Luis Obispo County Air Pollution Control District rules, ordinances regulations.

Noise

The following control measures shall be implemented to minimize noise and vibrations disturbances during periods of construction:

Equipment Noise Control

1. Use newer equipment with improved muffling, and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine enclosures, and engine vibration isolators intact and operational. Newer equipment will generally be quieter in operation than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers, shrouding, etc.).
2. Use construction methods or equipment that will provide the lowest level of noise and ground vibration impact, such as alternative low noise pile installation methods.
3. Turn off idling equipment.
4. Temporary noise barriers shall be used and relocated, as needed, to protect sensitive receptors against excessive noise from construction activities. Noise barriers can be made of heavy plywood or moveable insulated sound blankets.

Administrative Measures

1. Implement a construction noise- and vibration-monitoring program to limit the impacts.
2. Plan noisier operations during times of least sensitivity to receptors.
3. Keep noise levels relatively uniform, and avoid impulsive noises.
4. Maintain good public relations with the community to minimize objections to the unavoidable construction impacts. Provide frequent activity updates of all construction activities.
5. The Cayucos-Morro Bay District Cemetery is adjacent to Old Creek. Caltrans was informed that the district will typically give approximately 48 hours advance notice of activity on the cemetery grounds. Construction will be halted prior to any service activity and will remain stopped until Caltrans is given the go-ahead to resume construction.

A combination of abatement techniques with equipment noise control and administrative measures can be selected to provide the most effective means to minimize effects of construction activity impacts. Application of abatement measures will reduce the construction impacts: however, a temporary increase in noise and vibration would likely occur.

Parks and Recreational Facilities

- Implement Noise and Air Avoidance, Minimization and/or Mitigation Measures.
- A Traffic Management Plan will be developed to help facilitate cars and bicycles entering Cass Street for beach access and an available shoulder for bicycles on State Route 1.

Pedestrian and Bicycle Facilities

- A Traffic Management Plan will be developed to help facilitate cars and bicycles entering Cass Street for beach access and an available shoulder for bicycles on State Route 1.
- No prolonged lane closures are anticipated during construction. Bridge construction will be conducted in stages, allowing traffic to pass through the project site. Traffic control will be in place during construction.
- During Stage 1, when the outside half of the bridge is being demolished and replaced, traffic would be limited to an 11-foot lane with a 5-foot shoulder (shoulders would remain in each stage to accommodate bicycles). Access to the existing left-turn channelization to Cass Avenue would not impacted.
- During Stage 2, when the inside half of the bridge is being demolished and replaced, traffic would be shifted to the new bridge and limited to one 11-foot

lane with a 5-foot shoulder. Channelization for left turns to Cass Avenue will also be shifted with temporary striping.

2.4 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation and disruption of migration corridors, changes in water quality and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under the California Environmental Quality Act can be found in Section 15355 of the CEQA Guidelines.

Affected Environment

Caltrans guidance for CEQA cumulative impacts assessments includes defining a Resource Study Area (RSA). A Resource Study Area is the geographic area within which impacts on a particular resource are analyzed. The boundaries of Resource Study Areas for cumulative impacts analysis are often broader than the boundaries used for project-specific analysis. Only the resources that have potential for cumulative impacts are discussed in this section.

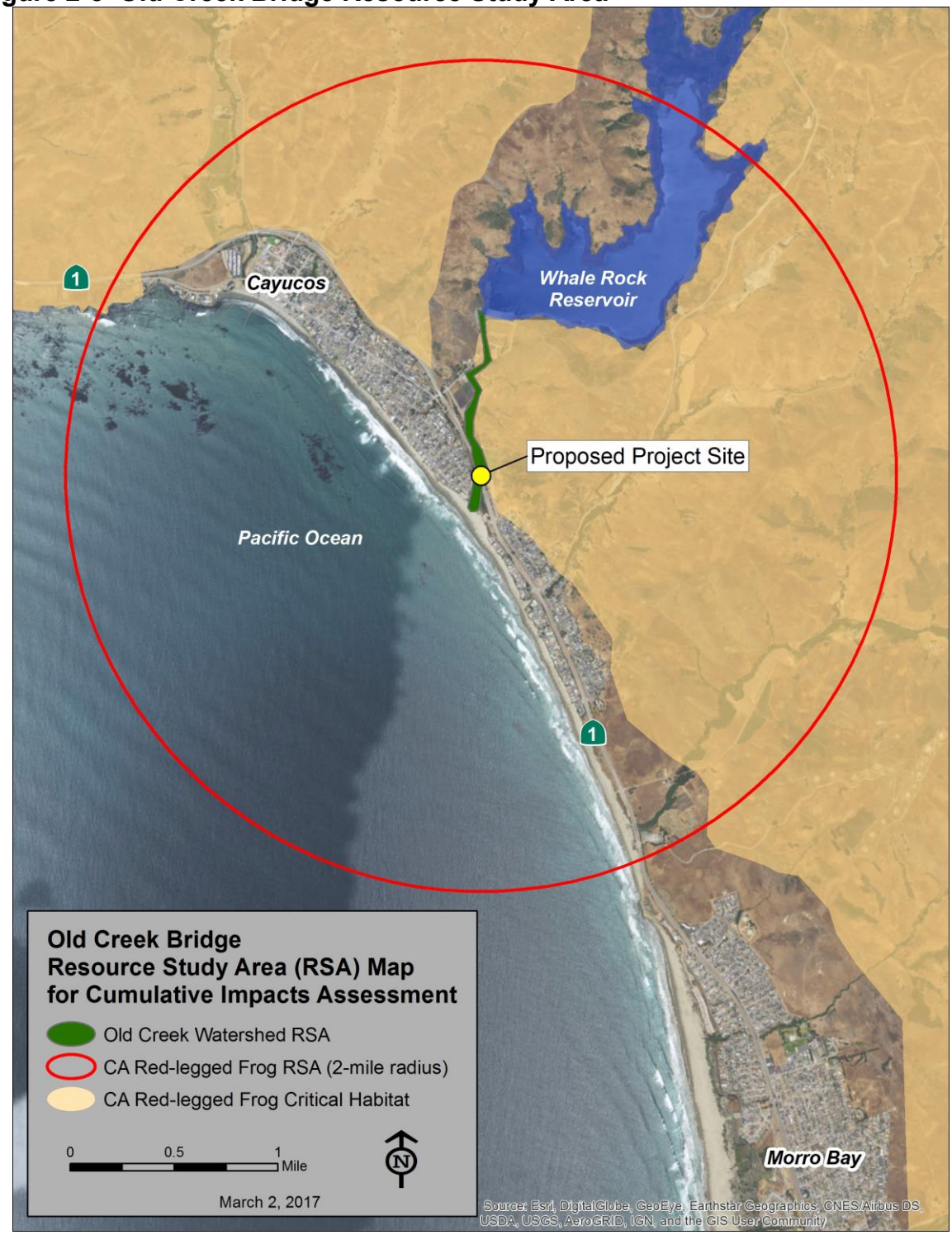
Identification of the resources to consider is the first step in preparing a cumulative impact analysis. The proposed project may affect jurisdictional waters, riparian habitat, California red-legged frog, south central California coast steelhead, tidewater goby, western pond turtle, two-striped garter snake and critical habitat for steelhead trout and tidewater goby. These species are dependent on riparian and aquatic habitat, therefore consideration of the effects of past, present and reasonably foreseeable activities on these habitats and hence these species provided the basis for selection of these resources in this cumulative impact analysis.

Jurisdictional Waters and Riparian Habitat

The Resource Study Area identified for jurisdictional waters and riparian habitat cumulative impact analysis is the Old Creek watershed. See Figure 2-5. According to wetlands mapping geographic information system (GIS) data from the National Wetlands Inventory (NWI), approximately 8 acres of various wetlands and/or stream habitat have been mapped along Old Creek (including its tributaries). Although not quantifiable based on lack of available information, it is likely that additional wetlands and/or riparian habitat were present along the watershed prior to the construction of Whale Rock Dam, SR 1, and the existing Old Creek Bridge in the mid-20th century. It has been estimated that, overall, California has lost approximately 90 percent of its historic riparian resources to alternative land use. Regulatory agencies have sought to offset the additional loss of wetlands and riparian habitat with restoration and revegetation requirements for projects within their respective jurisdictions.

Since approximately the 1950s, the trend has been in a decline of the health of the wetland and riparian habitats along the Old Creek watershed; there is no evidence of increased degradation of these habitats during recent years, with vegetation currently appearing to exhibit good health and vigor. Therefore, the trend for current health of these habitats along Old Creek is considered to be stable or slightly improving. See Figures 2-3, 2-4 and Table 2 for more information.

Figure 2-5 Old Creek Bridge Resource Study Area



Steelhead trout Critical Habitat

The Resource Study Area identified for steelhead trout critical habitat cumulative impacts analysis is the Old Creek watershed. Of the approximately 8 acres of instream habitat along Old Creek and tributaries within Old Hydrologic Sub-area 331017, the impacts to steelhead trout critical habitat associated with the proposed project would be less than 4 percent of the available habitat along Old Creek, with most of this impact attributed to temporary dewatering.

California red-legged frog Critical Habitat

The Resource Study Area under consideration for California red-legged frog critical habitat cumulative impacts analysis is federally designated critical habitat for the species within 2 miles of the Old Creek watershed, whereby 2 miles is a conservative dispersal distance for the California red-legged frog. There is approximately 3,675 acres of federally designated California red-legged frog critical habitat within the Resource Study Area.

Critical habitat for steelhead trout was designated in 2005 (NMFS 2005a), and critical habitat for California red-legged frog was most recently designated in 2010 (USFWS 2010). Along the west coast of California, critical habitat for both species currently remains stable, but threats from ongoing and future impacts may include coastal development projects, highway construction, water diversions, flood control maintenance activities, overgrazing of aquatic and riparian habitats, competition and/or predation from non-native species, non-native plant introduction, habitat disturbance, drought conditions and climate change. For the steelhead trout critical habitat Resource Study Area under consideration, these threats appear to be attenuated along the Old Creek watershed other than routine maintenance of Whale Rock Dam. For the more expansive California red-legged frog critical habitat Resource Study Area under consideration, while some of the above mentioned threats may materialize in certain pockets of habitat, this area consists mainly of rangelands that are not currently proposed for future development.

Steelhead trout

The Resource Study Area under consideration for steelhead trout cumulative impacts analysis is the Old Creek watershed. Considering recent trend lines and the current health of Old Creek steelhead trout, detailed information is fairly sparse regarding steelhead trout numbers along Old Creek in recent years.

Tidewater goby

The Resource Study Area under consideration for tidewater goby cumulative impacts analysis is where the available tidewater goby habitat near the mouth of Old Creek at Morro Strand State Beach encompasses approximately 5 to 10 acres. Population density in Old Creek has been characterized as variable with intermittent presence, with the nearest other extant population approximately 1 mile away at Willow Creek. Largemouth bass and bullfrogs have each been implicated in impacts to the Old

Creek tidewater goby population, but evidently Old Creek has been historically recolonized by tidewater goby. Other than competition/predation from non-native species, other potential threats within Old Creek include habitat degradation via water diversions/groundwater pumping.

California red-legged frog

The Resource Study Area under consideration for California red-legged frog cumulative impacts analysis is federally designated critical habitat for the species within 2 miles of the Old Creek watershed, whereby 2 miles is a conservative dispersal distance for the California red-legged frog.

Other California red-legged frog population data from Old Creek and surrounding areas have not been available based on the literature review conducted for this NES. No pertinent population data for California red-legged frog specific to the RSA could be found during the literature review. However, current threats to potential habitat for California red-legged frog within the RSA are low, and the population is considered stable. California red-legged frogs face similar threats as those previously described for steelhead and tidewater goby. As the proposed project will require temporary and permanent impacts to potential habitat for California red-legged frog (and only temporary impacts to critical habitat), the project is contributing to a cumulative impact to this species in the RSA. However, because these impacts are very small relative to the available habitat in the RSA, the contribution to cumulative impacts to California red-legged frog in the RSA is not considered substantial.

Western pond turtle and Two-striped garter snake

The Resource Study Area under consideration for western pond turtle and two-striped garter snake cumulative impacts analysis is the Old Creek watershed. Western pond turtles were once widely distributed in central California, but populations have declined and continue to decline over most of their range. Habitat destruction is attributed to being the major cause of this population decline. Over 90 percent of the wetland habitat within the historic range of the western pond turtle in California has been eliminated due to agricultural development, flood control, water diversion projects and urbanization. Habitat modification, predation by introduced species, and loss of prey food base have been noted as causes for the decline of two-striped garter snake.

Other Projects in the Resource Study Area

Information on current and probable future projects was requested from the County of San Luis Obispo Planning Department, RWQCB, and USACE.

Caltrans is aware of three other projects within the RSA:

- Chevron's Estero Marine Terminal Decommissioning project. The project proposes to survey, excavate, test, and sample pipelines that pass from the

onshore Estero Marine Terminal (EMT) facility to the offshore oil tanker mooring site located approximately 4,000 feet offshore. The EMT facility is located on the inland side of SR-1 adjacent to Toro Creek, between Morro Bay and Cayucos. Project activities would include construction of temporary vehicle access routes; transportation of equipment and supplies between staging site and work areas; excavation and removal of pipeline related materials; dewatering and testing of pipelines. A Coastal Development Permit (CDP) was approved on July 10, 2013.

- Morro Bay to Cayucos Connector project. The project would build and completed the non-motorized transportation network between the city of Morro Bay with the community of Cayucos along SR-1. The project would be a completion of the bikeway network between the two locations. The project would include signing for existing bikeways, development of a dedicated bike/pedestrian corridor, completely separated from traffic, where no corridors currently exist. Final Environmental Impact Report (FEIR) was approved in July of 2010.

- Toro Creek Bridge Replacement Project. Caltrans has proposed to upgrade bridge railing at Toro Creek (#49-68R) along SR-1 in Morro Bay at PM 32.61. The existing rails on the bridges at Toro Creek are of the concrete baluster type and have sustained some damage from previous collisions that have since been patched. The bridge railings and shoulder widths (2.6-feet existing width) at this location are non-standard. This project proposes to upgrade all bridge railing to current standards and to widen the bridge to current standards. Current standard shoulder widths should be 8 feet (right shoulder) and 5 feet (inside shoulder) for the Toro Creek Bridge.

Environmental Consequences

Jurisdictional Waters and Riparian Habitat

The proposed project is not anticipated to substantially contribute to the cumulative jurisdictional waters and/or riparian impacts that are occurring, beyond the continuing effects of present land uses that have and are likely to occur into the future. The impacts to jurisdictional waters and/or riparian habitat associated with the project will be relatively small in scale, and compensatory mitigation will be implemented to offset impacts.

Steelhead trout Critical Habitat

The proposed project will result in a small amount of temporary and permanent impacts to steelhead trout critical habitat and a very small amount of temporary impacts to California red-legged frog critical habitat (upland habitat only). Given the historical context and the likelihood that areas since designated as critical habitat have been substantially impacted over time, these resources have been subjected to

cumulative impacts. However, considering the apparently stable health of critical habitat within the respective Resource Study Areas, it is expected that these resources will remain stable. The proposed project is not anticipated to substantially contribute to the cumulative critical habitat impacts that are occurring, beyond the continuing effects of present land uses that have and are likely to occur into the future.

Steelhead trout

The proposed project is not anticipated to substantially contribute to the cumulative steelhead trout impacts that are occurring, beyond the continuing effects of present land uses that are reasonably have and are likely to occur into the future. The impacts to steelhead trout associated with the project will be relatively small in scale, and compensatory mitigation will be implemented to offset impacts to vegetation.

Tidewater goby

The proposed project is not anticipated to substantially contribute to the cumulative tidewater goby impacts that are occurring, beyond the continuing effects of present land uses that are reasonably have and are likely to occur into the future. The impacts to tidewater goby associated with the project will be relatively small in scale, and compensatory mitigation will be implemented to offset impacts to vegetation.

California red-legged frog

Given the historical context and the likelihood that California red-legged frogs have been substantially impacted over time, this resource has been subjected to cumulative impacts. However, considering the stable health of this resource along Old Creek, it is expected that the existing California red-legged frog population will continue to be stable. The very small amount of temporary impacts associated with the proposed project would be much less than 0.001 percent of this critical habitat unit, with all of this impact attributed to temporary dewatering. There would be no permanent impacts to California red-legged frog critical habitat. The proposed project is not anticipated to substantially contribute to the cumulative California red-legged frog impacts that are occurring, beyond the continuing effects of present land uses that are reasonably have and are likely to occur into the future. The impacts to California red-legged frog associated with the project will be relatively small in scale, and compensatory mitigation will be implemented to offset impacts to vegetation.

Western pond turtle and Two-striped garter snake

Given the historical context and the likelihood that these two species have been substantially impacted over time, these resources have been subjected to cumulative impacts. However, considering the apparently stable health of these resources along Old Creek, it is expected that the existing western pond turtle and two-striped garter snake populations will remain stable. The proposed project is not anticipated to

substantially contribute to the cumulative impacts to western pond turtle that are occurring, beyond the continuing effects of present land uses that are reasonably have and are likely to occur into the future. The impacts to western pond turtle and two-striped garter snake associated with the project will be relatively small in scale, and compensatory mitigation will be implemented to offset impacts to vegetation.

Avoidance, Minimization, and/or Mitigation Measures

No additional measures are proposed beyond those identified in the Avoidance, Minimization and/or Mitigation Measures in Section 2.3.2 Wetlands and Other Waters and Section 2.3.5 Threatened and Endangered Species.

2.5 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gases generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation.[2] In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of greenhouse gas emissions.[3] The dominant greenhouse gas emitted is CO_2, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." "Greenhouse gas mitigation" is a term for reducing greenhouse gas emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

[2] https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014
[3] https://www.arb.ca.gov/cc/inventory/data/data.htm

Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce greenhouse gas emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source greenhouse gas reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and greenhouse gas emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 U.S. Code Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. The Federal Highway Administration therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.[4] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability."[5] Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been carried out at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR): With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

[4] https://www.fhwa.dot.gov/environment/sustainability/resilience/
[5] https://www.sustainablehighways.dot.gov/overview.aspx

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards: This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, 74 *Federal Register* 52117 (October 8, 2009): This federal order set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. It instituted as policy of the United States that federal agencies measure, report, and reduce their greenhouse gas emissions from direct and indirect activities.

Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, 80 Federal Register 15869 (March 2015): This order reaffirms the policy of the United States that federal agencies measure, report, and reduce their greenhouse gas emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and greenhouse gas emissions. It builds on the adaptation and resiliency goals in previous executive orders to ensure agency operations and facilities prepare for impacts of climate change. This order revokes Executive Order 13514.

The U.S. EPA's authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts* v. *EPA* (2007). The Supreme Court ruled that greenhouse gases meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the court's ruling, the U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

The U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of greenhouse gas emission standards for new cars and light-duty vehicles in April 2010[6] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the

[6] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because the NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and greenhouse gas emissions standard stringency for model years 2022–2025. The NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Donald Trump ordered the EPA to reopen the review and reconsider the mileage target.[7]

The NHTSA and EPA issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO_2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth*, of March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of greenhouse gas emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State

With the passage of legislation including State Senate and Assembly bills and executive orders, California has been innovative and proactive in addressing greenhouse gas emissions and climate change.

Assembly Bill 1493, Pavley Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this executive order is to reduce California's greenhouse gas emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB 32 in 2016.

[7] http://www.nbcnews.com/business/autos/trump-rolls-back-obama-era-fuel-economy-standards-n734256 and https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse

Assembly Bill 32 (AB 32), Chapter 488, 2006: Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 greenhouse gas reduction goals.

Senate Bill 97 (SB 97), Chapter 185, 2007, Greenhouse Gas Emissions: This bill requires the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

Senate Bill 391 (SB 391), Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Executive Order B-16-12 (March 2012). This order requires State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015): This order establishes an interim statewide greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016: This bill codifies the greenhouse gas reduction targets established in Executive Order B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Environmental Setting

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce greenhouse gas emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. ARB approved the *First Update to the Climate Change Scoping Plan* on May 22, 2014. ARB is moving forward with a discussion draft of an updated Scoping Plan that will reflect the 2030 target established in Executive Order B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the greenhouse gas inventory for California.[8] ARB is responsible for maintaining and updating California's greenhouse gas inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

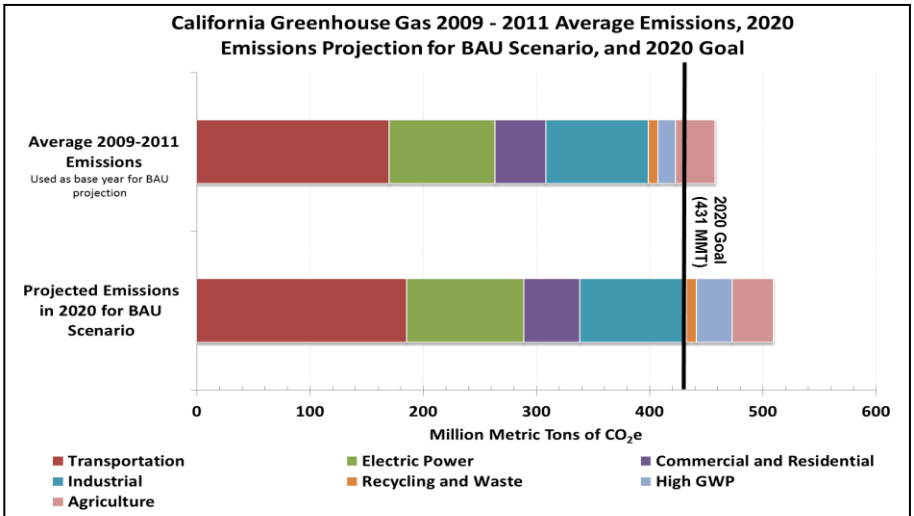
An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 2-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating

[8] 2016 Edition of the GHG Emission Inventory Released (June 2016): https://www.arb.ca.gov/cc/inventory/data/data.htm

progress toward meeting the 2020 goal of 431 MMTCO2e.[9] The 2017 edition of the greenhouse gas emissions inventory (released June 2017) found total California emissions of 440.4 $MMTCO_2e$, showing progress toward meeting the AB 32 goals.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 $MMTCO_2e$ total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 $MMTCO_2e$.

Figure 2-6 2020 Business as Usual (BAU) Emissions Projection 2014 Edition



https://www.arb.ca.gov/cc/inventory/data/bau.htm

Project Analysis

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of greenhouse gas.[10] In assessing cumulative impacts, it must be

[9] The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4)

[10] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management

determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

Greenhouse gas emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best faith effort to describe the potential greenhouse gas emissions related to the proposed project.

Operational Emissions

The proposed project would retrofit or replace an existing deficient bridge. Each of the build alternatives involves improvements that will maintain the existing two traffic lanes while providing safety improvements including standard shoulders, standard bridge rails with bicycle rails, and a Class III bike route consistent with SR 1 in this area. While construction emissions would be unavoidable, the project will not add lanes or otherwise increase the capacity of the roadway for motor vehicles; accordingly, no increase in operational greenhouse gas emissions is anticipated. The wider shoulders and bicycle safety improvements may encourage more use of non-motorized modes of transportation.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

An estimate of expected construction-related greenhouse gas emissions was conducted using the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, version 8.1.0. Project construction is estimated to generate approximately 1236.54 tons of CO_2, approximately 0.35 tons of CH_4, and approximately 0.1 tons of N_2O for the duration of the 15-month construction period.

All construction contracts include Caltrans Standard Specifications that require compliance with all ARB and local air district rules, regulations, ordinances, and

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District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

statutes, some of which can contribute to reducing construction greenhouse gas emissions.

CEQA Conclusion

While the project will result in a slight increase in greenhouse gas emissions during construction, it is anticipated that the project will not result in any increase in operational greenhouse gas emissions. While it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Statewide Efforts

In an effort to further the vision of California's greenhouse gas reduction targets outlined an AB 32 and SB 32, Governor Edmund G. Brown Jr. identified key climate change strategy pillars (concepts). See Figure 2-2. These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 greenhouse gas emissions target. These pillars are (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy-efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

Figure 2-7 Governor's Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

The transportation sector is integral to the people and economy of California. To achieve greenhouse gas emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. Greenhouse gas emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown's key pillars sets the ambitious goal of reducing today's petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove carbon dioxide from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Executive Order B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut greenhouse gas emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. The plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations (MPOs) have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce greenhouse gas emissions, among other goals. Specific performance targets in the plan that will help to reduce greenhouse gas emissions include:

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled per capita

- Reducing Caltrans' internal operational (buildings, facilities, and fuel) greenhouse gas emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several funding and technical assistance programs that have greenhouse gas reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in *Caltrans Activities to Address Climate Change* (2013).

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project.

To the extent that is possible or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce greenhouse gas emissions, improve bike/pedestrian access and potential climate change impacts from the project:

1. The project includes re-vegetation of all disturbed soil areas following completion of construction. Such landscaping reduces surface warming and, through photosynthesis, removes carbon dioxide from the atmosphere.
2. According to Caltrans's Standard Specifications, the contractor must comply with all local Air Pollution Control District rules, ordinances, and regulations in regard to air quality.
3. Temporary one-way traffic control during construction would be timed to reduce vehicle idling time.
4. Signage would be installed adjacent to the temporary traffic signals encouraging motorists to turn off their engines while waiting for the signal to change.
5. The project would make use of energy-efficient, light-emitting diode (LED) bulbs in the temporary traffic signals.
6. The project would provide standard shoulders that would accommodate a Class III bike route.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage—or, put another way, planning and design for resilience. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. These types of impacts to the transportation infrastructure may also have economic and strategic ramifications.

Federal Efforts

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality, the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011,[11] outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provided an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The federal Department of Transportation issued *U.S. DOT Policy Statement on Climate Adaptation* in June 2011, committing to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions."[12]

To further the Department of Transportation Policy Statement, on December 15, 2014, the Federal Highway Administration issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*).[13] This directive established Federal Highway Administration policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The Federal Highway Administration will work to integrate consideration of these risks into its planning, operations, policies, and programs in

[11] https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience

[12] https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm

[13] https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm

order to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation's transportation systems.

The Federal Highway Administration has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.[14]

State Efforts

On November 14, 2008, then-Governor Arnold Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea-level rise caused by climate change. This order set in motion several agencies and actions to address the concern of sea-level rise and directed all state agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea-level rise. Sea-level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, and storm surge and storm wave data.

Then-Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise Assessment Report),[15] was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates, and the range of uncertainty in selected sea-level rise projections. It provided a synthesis of existing information on projected sea-level rise impacts to state infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems, and a discussion of future research needs regarding sea-level rise.

In response to Executive Order S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, state, federal, and public and private entities, developed *The California Climate Adaptation Strategy* (December 2009),[16] which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

Governor Brown enhanced the overall adaptation planning effort by signing Executive Order B-30-15 in April 2015, requiring state agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific

[14] https://www.fhwa.dot.gov/environment/sustainability/resilience/
[15] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.
[16] http://www.climatechange.ca.gov/adaptation/strategy/index.html

Implementation Action Plans that demonstrate how state agencies are implementing Executive Order B-30-15 were added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

Executive Order S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided "guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California," specifically, "information and recommendations to enhance consistency across agencies in their development of approaches to SLR." The March 2013 update[17] finalizes the SLR Guidance by incorporating findings of the National Academy's 2012 final Sea-Level Rise Assessment Report; the policy recommendations remain the same as those in the 2010 interim SLR Guidance. The guidance will be updated as necessary in the future to reflect the latest scientific understanding of how the climate is changing and how this change may affect the rates of seal level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation, and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is actively engaged in in working toward identifying these risks throughout the state and will work to incorporate this information into all planning and investment decisions as directed in Executive Order B-30-15.

Sea Level Rise

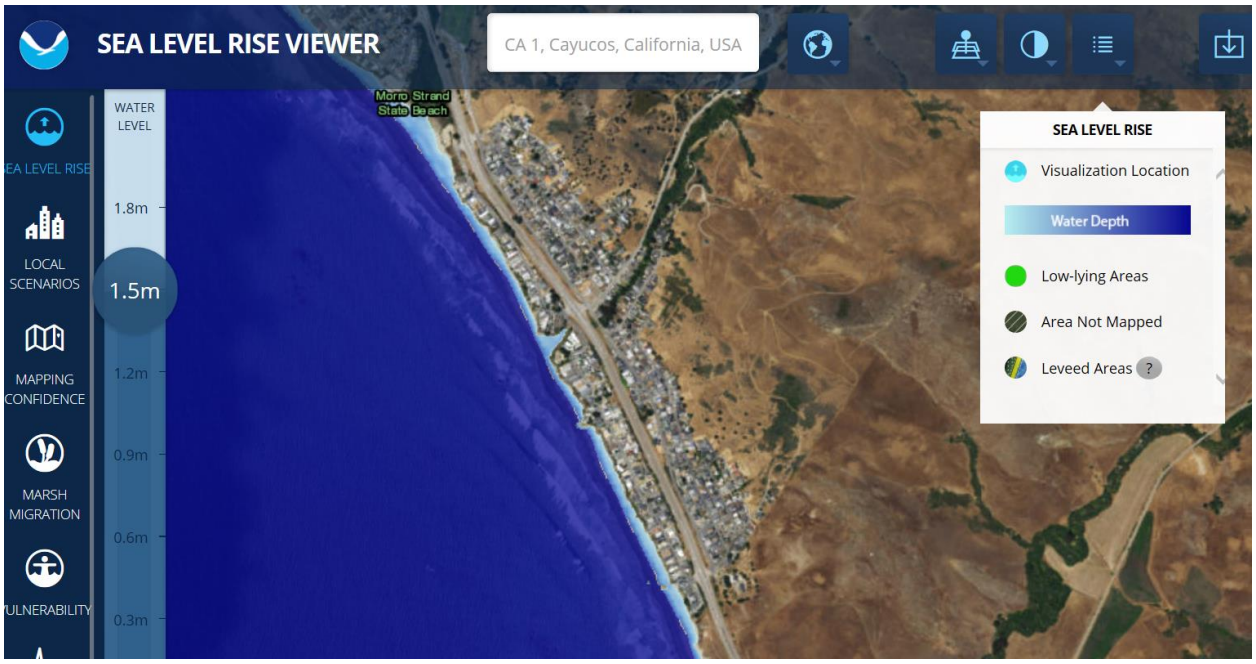
Potential sea level rise at this project location for three scenarios, according to the March 2013 update of the State of California Sea-level Rise Guidance Document, developed by the CO-CAT, is listed below:

- 2030: 1.56 inches to 1 foot
- 2050 4.7 inches to 2.0 feet
- 2100: 1 foot-5 inches to 5.5 feet

According to the NOAA Sea Level Rise Viewer, water levels would approach the new bridge structure by 2100, however under no future scenario would sea level rise inundate the structure. Figure 2-3 shows the possible sea level at 4 feet 11 Inches (slightly lower than the year 2100 prediction for sea level rise).

[17] http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/

Figure 2-8 4 feet-11inches (1.5 Meters) Sea Level Rise



The bridge was built in 1941. This existing continuous reinforced concrete slab has a total of five spans. There is no major channel degradation that has occurred in the last 73 years. The proposed widening work (Alternative 1) is viable and should cause minimal adverse hydraulic impacts to the existing channel. Regardless, the roadway and bridge deck profile itself will be raised by 4.8 inches on the southern end and 10.8 inches on the northern end. Also, Alternative 2 would feature a soffit/deck combined depth of 1 foot-11 inches, and Alternative 3 would feature a soffit/deck combined depth of 2 feet-11 inches. This would result in an increased clearance under the bridge of 4 feet-5 inches with Alternative 2 and 3 feet-5 inches with Alternative 3 before accounting for the raised profile, which would allow for substantially greater clearance from rare high water levels.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis required, potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency consultation for this project has been accomplished through a variety of formal and informal methods, including Project Development Team meetings, interagency coordination meetings, and so on. Public participation will be sought through the release and review of this Initial Study/Proposed Mitigated Negative Declaration. This chapter summarizes the results of Caltrans efforts to identify, address, and resolve project-related issues through early and continuing coordination.

October 19, 2016: Caltrans hosted a field meeting at the Old Creek Bridge project site with several regulatory agencies. In attendance were Chris Diel and Mark Ogonowski (U.S. Fish and Wildlife Service), Jay Ogawa (National Marine Fisheries Service), Paula Richter (Regional Water Quality Control Board), Reagen O'Leary (California Department of Fish and Wildlife), and Daniel Robinson (CCC). The purpose of the meeting was to introduce the project, discuss design options, potential environmental impacts, and potential permitting implications.

June 8, 2017: Caltrans hosted a field meeting at the Old Creek Bridge project site with PG&E and Charter Communications. In attendance were Tim Pearson and Robert Breese (PG&E) and Jeff Davis (Charter). The purpose of the meeting was to discuss utility relocation, maintenance and landscape mitigation.

Summary of Cultural Studies and Consultation for the Old Creek Bridge

9/3/2013: Cultural resources Task Order initiated with archaeological consultant (Far Western) for the San Luis Obispo County Bridge Rail Project.

10/25/2013: Caltrans initiated consultation with Native Americans for the San Luis Obispo County Bridge Rail Project.

9/25/2013 and 1/23/2014: Far Western conducted archaeological survey for the San Luis Obispo County Bridge Rail Project.

2/2014: Far Western completes Archaeological Survey Report.

9/2015: San Luis Obispo County Bridge Rail Project was split into three separate projects. Caltrans has new archaeological consultant (Applied Earthworks).

3/17/2016: Native American consultation letters sent out with archaeological testing proposal, includes both Old Creek and Toro Creek combined due to bridges' proximity to one another.

4/20/2016: Field review for testing proposal for both Old Creek and Toro Creek with Native Americans, Caltrans environmental and engineer staff.

6/17/2016: Extended Phase I testing completed at Old Creek. No archaeological sites located in the project Area of Potential Effects.

10/4/2016: Draft testing report for Old Creek sent to Native American members.

12/6/2016: Final testing report completed for Old Creek.

12/2016: Supplemental Archaeological Survey Report for Old Creek completed for additional project area. No cultural resources located in the supplemental study area.

1/23/2017: Section 106 is complete for Old Creek. No cultural resources are located in project Area of Potential Effects with finding of No Historic Properties Affected. Consultation was not required with State Historic Preservation Office nor Caltrans Cultural Studies Office.

Summary of Biology Consultation for the Old Creek Bridge Project 05-0L720/0L722

12/19/2016: Geoff Hoetker submitted a new request online through the U.S. Fish and Wildlife Service IPaC website (IPaC 2016) for an official U.S. Fish and Wildlife Service species list update.

12/19/2016: Geoff Hoetker submitted a new request to Jay Ogawa via email for an official National Marine Fisheries Service species list update.

12/20/2016: Jay Ogawa responded via email indicating the original National Marine Fisheries Service species list remained valid.

5/10/2017: Geoff Hoetker submitted a new request to Jay Ogawa via email for an official National Marine Fisheries Service species list update.

5/12/2017: Jay Ogawa responded via email indicating the original National Marine Fisheries Service species list remained valid.

12/6/2017: Geoff Hoetker submitted a new request to Jay Ogawa via email for an official National Marine Fisheries Service species list update.

12/6/2017: Jay Ogawa responded via email indicating the original National Marine Fisheries Service species list remained valid.

8/16/2017: Caltrans received a Biological Opinion from the U.S. Fish and Wildlife Service, completing Federal Endangered Species Act Section 7 consultation with the U.S. Fish and Wildlife Service.

12/6/2017: Geoff Hoetker submitted a new request online through the U.S. Fish and Wildlife Service IPaC website,for an official U.S. Fish and Wildlife Service species list update.

Chapter 4 List of Preparers

This document was prepared by the following Caltrans Central Region staff:

Carr, Robert. Associate Landscape Architect. B.S., Landscape Architecture, California Polytechnic State University, San Luis Obispo; 20 years of experience preparing Visual Impact Assessments. Contribution: Visual Impact Study.

Castillo, Jason. Project Engineer. Transportation Engineer, M.S., P.E., MSCE University of California, Irvine; BSCE California State University, Fresno; 20 years of experience in civil, structural, and transportation engineering. Contribution: Design Engineer.

Chafi, Abdul Rahmin, N.P.E. Civil/Environmental Engineer. Ph.D., Environmental Engineering Management, California Coast University, Santa Ana; M.S., Civil Engineering, California State University, Fresno; 18 years of experience in environmental engineering conducting air, noise, and water quality analysis. Contribution: Air and Noise Studies.

Fowler, Matt. Senior Environmental Planner. B.A., Geographic Analysis, San Diego State University; 16 years of experience in environmental planning. Contribution: Oversight of the Initial Study.

Gokal, Apurva. Project Engineer. P.E., BSCE California State Polytechnic University, Pomona; 21 years of experience in civil, transportation, and structural engineering. Contribution: Design Engineer, Transportation Engineer, Civil.

Hoetker, Geoff. Consultant Associate Environmental Planner (Biology). M.S., Biological Sciences, California Polytechnic State University, San Luis Obispo; B.S., Biology, California State University, Bakersfield; 16 years of environmental planning and biological sciences experience. Contribution: Natural Environment Study.

Ivey, Laura. Associate Landscape Architect. B.S., Landscape Architecture, University of California, Davis; 20 years of experience as a Landscape Architect. Contribution: Landscape Design.

Kloth, Joel. Engineering Geologist. B.S., Geology, California Lutheran University; more than 30 years of experience in petroleum geology, geotechnical geology, and environmental engineering/geology-hazardous waste. Contribution: Initial Site Assessment.

Leyva, Isaac. Engineering Geologist. B.S., Geology, California State University, Bakersfield; A.S., Cuesta College, San Luis Obispo; 20 years of experience in petroleum geology, environmental, geotechnical engineering. Contribution: Paleontology Technical Report, Water Quality Assessment.

MacDonald, Christina. Associate Environmental Planner. B.A., Anthropology, University of California, Los Angeles; M.A., Cultural Resources Management, Sonoma State University; 20 years of experience in California archaeology. Contribution: Historic Property Survey Report.

McGuigan, Julie. Wildlife and Fisheries Conservation Biologist. B.S., University of California, Davis; 18 years of environmental planning experience. Contribution: Coordinated the environmental process and prepared the Initial Study.

Papathakis, John. Transportation Civil Engineer. P.E., B.S., Environmental Engineering, California Polytechnic State University, San Luis Obispo; 10 years of experience in civil and transportation engineering. Contribution: NPDES Stormwater Coordinator, Storm Water Data Report.

Rasmussen, David. Project Manager. P.E., BSCE California State University, Fullerton; 24 years of experience in civil and transportation engineering.

Yu, Carla. Project Manager. P.E., B.S. Civil Engineering, California Polytechnic State University, San Luis Obispo; 17 years of experience in structural, civil, and transportation engineering. Contribution: Project Manager

Chapter 5 Distribution List

San Luis Obispo County Public Library
995 Palm Street
San Luis Obispo, CA 93401

San Luis Obispo County Planning and Building
976 Osos Street
Room 200
San Luis Obispo, CA 93408

U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Staff Involved: Christopher Diel

U.S. Army Corps of Engineers
1455 Market Street
San Francisco, CA 94103

National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213
Staff Involved: Jay Ogawa

California Department of Fish and Wildlife
1234 East Shaw Avenue
Fresno, CA 93710
Staff Involved: Steven Hulbert

Regional Water Quality Control Board – Central Coast Region
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401
Staff Involved: Paula Richter

San Luis Obispo County Bicycle Advisory Committee (BAC)
County Government Center – Room 206
1055 Monterey Street
San Luis Obispo, CA 93408

Appendix A California Environmental Quality Act Checklist

CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

XII. NOISE: Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. TRIBAL CULTURAL RESOURCES: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

XVIII. UTILITIES AND SERVICE SYSTEMS: Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIX. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

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March 2013

NON-DISCRIMINATION
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

Appendix C Minimization and/or Mitigation Summary

Below are summaries of the avoidance, minimization and/or mitigation measures that would be used in the project. For detailed description of the following measures, refer to the appropriate topic section in Chapter 2.

Utilities and Emergency Services (Section 2.1.3)

1. The overhead electric line and telephone/cable communication lines would be permanently relocated underground to allow for construction of the replacement bridge. The relocation would occur before construction begins.

2. Potholing and exploratory digging activities will avoid the streambed and wetland areas when possible. Disturbed areas will be restored to pre-disturbed conditions when activities have concluded.

3. A Traffic Management Plan would be establish during the Design phase of the project development process. This plan would assist emergency responders during construction to minimize response time delays.

Traffic and Transportation/Pedestrian and Bicycle Facilities (Section 2.3.7)

1. Traffic control would mirror staged construction of the bridge. Traffic would be separated from construction activity by temporary railing, type-k.

2. During Stage 1, when the outside half of the bridge is being demolished and replaced, traffic would be limited to an 11-foot lane with a 5-foot shoulder (shoulders would remain in each stage to accommodate bicycles). Access to the existing left-turn channelization to Cass Avenue would not impacted.

3. During Stage 2, when the inside half of the bridge is being demolished and replaced, traffic would be shifted to the new bridge and limited to one 11-foot lane with a 5-foot shoulder. Channelization for left turns to Cass Avenue will also be shifted with temporary striping.

Visual/Aesthetics (Section 2.1.4)

With implementation of the following features, the project would be consistent with the aesthetic and visual resource protection goals along SR 1 and the community as defined by the State Scenic Highway and National Scenic Byway goals as well as Coastal Act policies:

1. Use steel, open-style Type ST-70 for the new bridge rail.

2. All new and replacement end treatment guardrail posts shall be colored with a stain such as Natina, as directed by Caltrans Landscape Architecture staff.
3. If possible, all vegetation control treatments should utilize a pervious surface such as crushed shale. If shale is not feasible, the surface paving shall be colored to match the color of the adjacent dirt, as directed by Caltrans Landscape Architecture staff.
4. Replace the existing yellow-array crash cushions in the median with an end treatment system that more closely resembles double thrie beam barrier.
5. Paint all new utility conduit attached to the northbound and southbound bridges to match the color of the bridge it is attached to.
6. Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques that save the most existing vegetation possible should be employed.
7. Revegetate the creek banks with native vegetation as directed by the Caltrans Biologist in conjunction with Caltrans Landscape Architecture.
8. Revegetate disturbed areas along the highway roadside, using plants which at maturity do not block ocean views as seen from Cayucos - Morro Bay Cemetery.
9. Following construction, re-grade and re-contour any new construction access roads, staging areas and other temporary uses as necessary to match the surrounding natural topography.

Water Quality/Stormwater Runoff– Hydrology (Section 2.2.1)

1. The project will employ storm water best management practices, temporary soils stabilization and sediment controls measures during construction.

2. During construction, the project will implement standard construction site practices, waste management procedures and storm water best management practices, in order to avoid generating significant levels of storm water pollutants.

3. Permanent erosion and sediment control BMPs will be applied to all disturbed soil areas near abutments, around piles or piers when soil disturbing activities are complete.

4. Temporary construction site items that will be employed for this project will include; preparation of a Water Pollution Control Program (WPCP), Job Site Management (non-storm water and waste management and materials pollution control BMPs), Temporary Large Sediment Barrier near bridge abutments (during demolition and construction), temporary concrete washout and temporary fencing (ESA).

Geology, Soils, Seismicity and Topography (Section 2.2.2)

1. The bridge design will incorporate Caltrans current Seismic Design Standards which will reduce the potential for failure from seismic events.

Hazardous Waste and Materials (Section 2.2.3)

1. Materials that have been identified as being hazardous materials will need to be handled and disposed of properly in accordance with the proper procedures.

2. Handling and disposal of removed LBP shall follow SSP 14-11.08.

3. Proper management of TWW shall follow SSP 14-11.14.

4. If lead free yellow stripe is identified within the project site, SSP 84-9.03C will be used. If the lead content of older yellow stripe found within the project site cannot be determined then SSP 14-11.12 must be used.

Biological Resources (2.3)

A. Measures for Jurisdictional Wetlands, Other Waters, Riparian Habitat, Steelhead Trout Critical Habitat and California Red-legged Frog Critical Habitat

1. Prior to construction, Caltrans shall obtain a Section 404 Nationwide Permit from the U.S. Army Corps of Engineers, a Section 401 Water Quality Certification from the Regional Water Quality Control Board, a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife, and a Coastal Development Permit (or Waiver) from the CCC.

2. Prior to construction, Caltrans shall prepare a Mitigation and Monitoring Plan (MMP) to mitigate impacts to vegetation and natural habitats. The Mitigation and Monitoring Plan shall be consistent with federal and state regulatory requirements and will be amended with any regulatory permit conditions, as required. Caltrans shall implement the Mitigation and Monitoring Plan as necessary during construction and immediately following project completion.

3. Prior to any ground-disturbing activities, Environmentally Sensitive Area fencing shall be installed around jurisdictional waters, coastal zone ESHAs, and the dripline of trees to be protected within project limits. Caltrans-defined Environmentally Sensitive Areas shall be noted on design plans and delineated in the field prior to the start of construction activities.

4. During construction, all project-related hazardous materials spills within the project site shall be cleaned up immediately. Readily accessible spill prevention and cleanup materials shall be kept by the contractor on-site at all times during construction.

5. During construction, erosion control measures shall be implemented. Silt fencing, fiber rolls, and barriers shall be installed as needed between the project site and jurisdictional other waters and riparian habitat. At a minimum, erosion controls shall be maintained by the contractor on a daily basis throughout the construction period.

6. During construction, the cleaning and refueling of equipment and vehicles shall occur only within a designated staging area. This area shall either be a minimum of 100 feet from aquatic areas or if the area is less than 100 feet from aquatic areas the area must be surrounded by barriers (e.g. fiber rolls or equivalent). The staging areas shall conform to Best Management Practices (BMPs) applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles shall be checked and maintained by the contractor on a daily basis to ensure proper operation and avoid potential leaks or spills.

7. Stream contours shall be restored as close as possible to their original condition.

Compensatory mitigation is proposed at a 1:1 ratio (acreage) for temporary impacts and at a 3:1 ratio (acreage) for permanent impacts to riparian and freshwater marsh vegetation via restoration (reestablishment).

Replacement plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan and the final Mitigation and Monitoring Plan. The Mitigation and Monitoring Plan will be developed in coordination with a biologist and will include developed planting specifications and grading plans to ensure survival of planted vegetation and re-establishment of functions and values. The final Mitigation and Monitoring Plan will detail mitigation commitments and will be consistent with standards and mitigation requirements from the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. 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 on-site and in-kind and consist mainly of native riparian species such as arroyo willow and associated understory such as California blackberry, and freshwater marsh emergent vegetation such as cattail, California bulrush, and tule.

B. Measures for Invasive Species (2.3.6)

1. During construction, Caltrans will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible.

2. Only clean fill shall be imported. When practicable, invasive exotic plants in the project site shall be removed and properly disposed. All vegetation removed from the construction site shall be taken to a certified landfill to prevent the spread of invasive species. If soil from weedy areas must be removed off-site, the top 6 inches containing the seed layer in areas with weedy species shall be disposed of at a certified landfill. Inclusion of any species that occurs on the Cal-IPC Invasive

Plant Inventory in the Caltrans erosion control seed mix or landscaping plans for the project shall be avoided.

3. If necessary, wash stations on-site shall be established for construction equipment under the guidance of Caltrans in order to avoid/minimize the spread of invasive plants and/or seed within the construction area.

C. Measures for Steelhead Trout and California Red-legged Frog Critical Habitat

Refer to various measures for jurisdictional wetlands, other waters, and riparian habitat; steelhead trout, and California red-legged frog, and other taxa are also applicable to federally designated critical habitat. These measures have been assessed as sufficient to minimize impacts to steelhead trout and California red-legged frog critical habitat.

D. Measures for San Luis Obispo Pyrg (2.3.5)

1. During pre-construction surveys and/or during construction, if biologists observe any *Pyrgulopsis* spp., they will be relocated to suitable aquatic habitat outside of the area of impact.

E. Measures for South-central California Coast Steelhead Trout (2.3.5)

1. Prior to construction, Caltrans shall acquire incidental take authorization for steelhead trout from the National Marine Fisheries Service through a Federal Endangered Species Act Section 7 Biological Opinion and Incidental Take Statement.

2. Prior to initiation of stream dewatering, a qualified biologist shall conduct an informal worker environmental training program including a description of steelhead trout, its legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating the Federal Endangered Species Act and permit conditions.

3. During construction, in-stream work shall be limited to the low-flow period from June 1 and October 31 in any given year, when the surface water is likely to be at seasonal minimum and to avoid adult steelhead trout spawning migration and peak smolt emigration. Deviations from this work window shall be made only with permission from Caltrans and the relevant regulatory/resource agencies.

4. During in-stream work, a qualified biologist shall be retained with experience in steelhead trout biology and ecology, aquatic habitats, biological monitoring (including dewatering), and capturing, handling, and relocating fish species. During in-stream work, the biological monitor(s) shall continuously monitor placement and removal of any dewatering system to capture stranded steelhead trout and other native fish species and relocate them to suitable habitat as

appropriate. The biologist(s) shall capture steelhead trout stranded as a result of dewatering and relocate steelhead trout to suitable instream habitat immediately downstream of the work area, using methods approved by the appropriate regulatory agencies. This may include, but not necessarily will be limited to: seine-netting, dip-netting, electrofishing, and providing aerated water in buckets for transport and ensuring adequate water temperatures during transport. The biologist shall note the number of steelhead trout observed in the affected area, the number of steelhead trout captured and relocated, and the date and time of the collection and relocation.

5. If electrofishing is authorized to capture and relocate steelhead trout, this activity must be conducted by National Marine Fisheries Service-approved biologists.

6. During in-stream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes shall be completely screened with no larger than 3/32-inch (2.38-mm) wire mesh to prevent steelhead trout and other sensitive aquatic species from entering the pump system. Pumped water will be directed through a silt filtration bag and/or into a settling basin allowing the suspended sediment to settle out prior to reentering the stream(s) outside of the isolated area. The form and function of all pumps used during the dewatering activities shall 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.

7. The biological monitor shall monitor erosion and sediment controls to identify and correct any conditions that could adversely affect steelhead trout or steelhead trout habitat. The biological monitor shall be granted the authority to halt work activity as necessary and to recommend measures to avoid/minimize adverse effects to steelhead trout and steelhead trout habitat.

8. Caltrans shall provide National Marine Fisheries Service a written summary of work performed (including biological survey and monitoring results), BMPs implemented (i.e., use of biological monitor, flagging of project areas, erosion and sedimentation controls) and supporting photographs. Furthermore, the documentation describing listed species surveys and relocation efforts (if appropriate) shall include name(s) of the Caltrans-approved biologist(s), location and description of area surveyed, time and date of survey, all survey methods used, a list and tally of all sensitive animal species observed during the survey, a description of the instructions/recommendations given to the applicant during the project, and a detailed discussion of capture and relocation efforts (if appropriate).

9. Sound-attenuating devices shall be used during pile driving, if feasible.

F. Measures for Tidewater Goby (2.3.5)

1. Prior to construction, Caltrans shall acquire incidental take authorization for the tidewater goby from the U.S. Fish and Wildlife Service through a Federal

Endangered Species Act Section 7 Biological Opinion and Incidental Take Statement.

2. Prior to initiation of stream dewatering, Caltrans shall conduct an informal worker environmental training program, including a description of the tidewater goby, its legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating the Federal Endangered Species Act and permit conditions.

3. During dewatering, any pumps used shall be fitted with an anti-entrapment device(s) to prevent tidewater gobies from being drawn into the pump or impinged on intake screening. As dewatering proceeds, the U.S. Fish and Wildlife Service-approved biologist(s) shall remove by hand or net all tidewater gobies found and relocate them to suitable habitat downstream of the proposed project site.

4. A U.S. Fish and Wildlife Service-approved biologist shall remain on-site and observe for tidewater gobies and turbidity levels within the work areas during all creek dewatering activities, and shall capture and relocate tidewater gobies to suitable habitat as necessary.

5. If electrofishing is authorized to capture and relocate tidewater gobies, this activity must be conducted by U.S. Fish and Wildlife Service-approved biologists.

6. Caltrans shall provide U.S. Fish and Wildlife Service a written summary of work performed (including biological survey and monitoring results), Best Management Practices implemented (i.e., use of biological monitor, flagging of project areas, erosion and sedimentation controls) and supporting photographs. Furthermore, the documentation describing listed species surveys and relocation efforts (if appropriate) shall include name(s) of the U.S. Fish and Wildlife Service-approved biologist(s), location and description of area surveyed, time and date of survey, all survey methods used, a list and tally of all sensitive animal species observed during the survey, a description of the instructions/ recommendations given to the applicant during the project, and a detailed discussion of capture and relocation efforts (if appropriate).

G. Measures for California Red-legged Frog (2.3.5)

1. Only U.S. Fish and Wildlife Service-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

2. Ground disturbance shall not begin until written approval is received from the U.S. Fish and Wildlife Service that the biologist is qualified to conduct the work.

3. A U.S. Fish and Wildlife Service-approved biologist shall 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 shall be allowed sufficient time to move them from the site before work begins. The U.S. Fish and Wildlife Service-approved biologist shall 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 shall be in the same drainage to the extent practicable. Caltrans shall coordinate with the U.S. Fish and Wildlife Service on the relocation site prior to the capture of any California red-legged frogs.

4. Before any activities begin on a project, a U.S. Fish and Wildlife Service-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall 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, with a qualified person on hand to answer any questions.

5. A U.S. Fish and Wildlife Service-approved biologist shall be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of habitat has been completed. After this time, Caltrans shall designate a person to monitor on-site compliance with all minimization measures. The U.S. Fish and Wildlife Service-approved biologist shall ensure this monitor receives the training outlined in measure 4 above and in the identification of California red-legged frogs. If the monitor or the U.S. Fish and Wildlife Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected in a manner not anticipated by Caltrans and U.S. Fish and Wildlife Service during review of the proposed action, they shall notify the resident engineer immediately. The resident engineer shall resolve the situation by requiring that all actions that are causing these effects be halted. When work is stopped, U.S. Fish and Wildlife Service shall be notified as soon as possible.

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

7. All refueling, maintenance and staging of equipment and vehicles shall occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat unless otherwise preapproved by the necessary agencies. The monitor shall ensure contamination of habitat does not occur during operations. Prior to the onset of work, Caltrans shall ensure that a plan is in place for prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

8. Habitat contours shall be returned to a natural configuration at the end of the project activities. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Caltrans determine that it is not feasible or modification of 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 shall be limited to the minimum necessary to achieve the project. Environmentally Sensitive Areas shall 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. Caltrans shall 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 degree 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 Caltrans and the U.S. Fish and Wildlife Service during project planning shall 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 completion, Caltrans shall implement Best Management Practices outlined in any authorizations or permits, issued under the authorities of the Clean Water Act received for the project. If the Best Management Practices are ineffective, Caltrans shall attempt to remedy the situation immediately, in coordination with U.S. Fish and Wildlife Service.

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

13. Unless approved by the U.S. Fish and Wildlife Service, water shall not be impounded in a manner that may attract California red-legged frogs.

14. A U.S. Fish and Wildlife Service-approved biologist shall permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkii*), and

centrarchid fishes from the project area, to the maximum extent possible. The U.S. Fish and Wildlife Service-approved biologist shall be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

15. If Caltrans demonstrates 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 U.S. Fish and Wildlife Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Task Force shall be followed at all times.

17. Project sites shall be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials shall be used to the extent practicable. Invasive, exotic plants shall be controlled to the maximum extent practicable. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Caltrans determine that it is not feasible or practical.

18. Caltrans shall not use herbicides as the primary method to control invasive, exotic plants. However, if it is determined that the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, the project will implement the following additional protective measures for the California red-legged frog:

    a. Caltrans shall not use herbicides during the breeding season for the California red-legged frog;

    b. Caltrans shall conduct surveys for the California red-legged frog immediately prior to the start of herbicide use. If found, California red-legged frogs shall be relocated to suitable habitat far enough from the project area so that no direct contact with herbicide would occur;

    c. Giant reed and other invasive plants shall 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 shall 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 shall be taken to ensure that no herbicide is applied to native vegetation;

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

g. Foliar applications of herbicide shall not occur when wind speeds are in excess of 3 miles per hour;

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

i. Application of all herbicides shall be done by qualified Caltrans staff or contractors to ensure that overspray is minimized, that all applications is made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins;

j. All herbicides, fuels, lubricants, and equipment shall 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, unless otherwise preapproved by the necessary agencies. Prior to the onset of work, Caltrans shall ensure that a plan is in place for a prompt and effective response to accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

H. Measures for Western Pond Turtle and Two-striped Garter Snake (2.3.4)

1. Prior to initiation of stream dewatering, Caltrans shall conduct an informal worker environmental training program including a description of the western pond turtle and two-striped garter snake, their legal/protected status, proximity to the project site, and avoidance/minimization measures to be implemented during the project.

2. Prior to construction, a biologist determined qualified by Caltrans shall survey the Area of Potential Impact and, if present, capture and relocate any western pond turtles or two-striped garter snakes to suitable habitat downstream of the Area of Potential Impact. Observations of Species of Special Concern or other special-status species shall be documented on California Natural Diversity Database forms and submitted to the California Department of Fish and Wildlife upon project completion. If these species or other Species of Special Concern aquatic species are observed during construction, they will likewise be relocated to suitable habitat outside of the impact area by a qualified biologist.

I. Measures for Southwestern Willow Flycatcher, Yellow-breasted Chat, American Yellow Warbler, Least Bell's Vireo, and Other Nesting Birds (2.3.4 & 2.3.5)

1. If feasible and regulatory approvals allow, tree removal shall be scheduled to occur from September 2 to February 14, 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 feet of potential habitat during the nesting season (February 15 to September 1), 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, Caltrans shall coordinate with the California Department of Fish and Wildlife to determine an appropriate buffer 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 the least Bell's vireo and/or southwestern willow flycatcher are observed within 100 feet of the Area of Potential Impact during the course of construction, a qualified biologist shall implement an exclusion zone and work shall be avoided within the exclusion zone until the least Bell's vireo and/or southwestern willow flycatcher is located greater than 100 feet from project-related disturbance. If an active least Bell's vireo and/or southwestern willow flycatcher nest is observed within 100 feet of the Area of Potential Impact, all project activities shall immediately cease and the U.S. Fish and Wildlife Service and Caltrans shall be contacted within 48 hours. Caltrans shall then reinitiate Federal Endangered Species Act Section 7 formal consultation with the U.S. Fish and Wildlife Service for least Bell's vireo and/or southwestern willow flycatcher and implement additional measures as necessary.

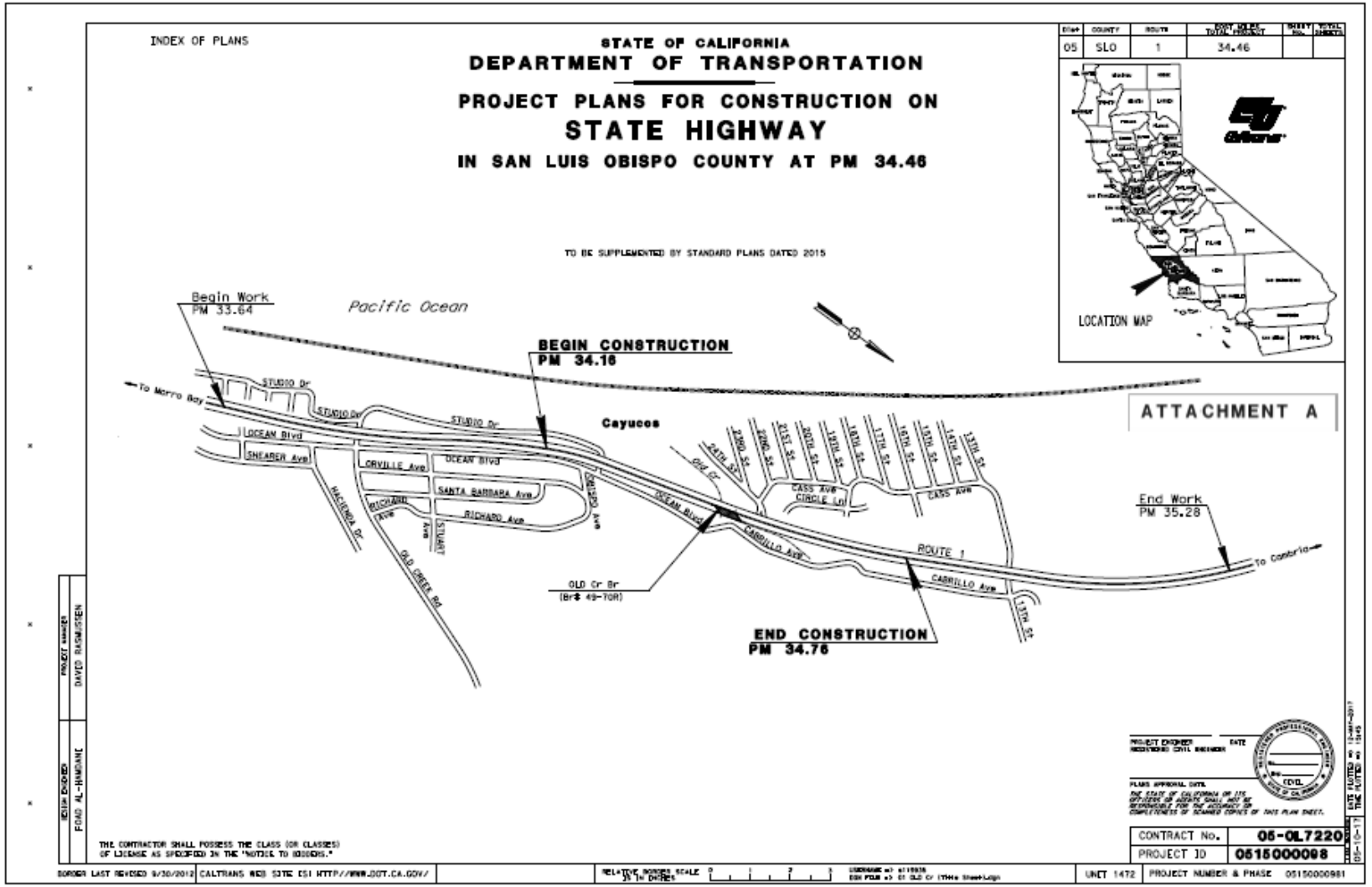
3. It is recommended that birds be excluded from the existing bridge prior to its demolition. Nesting bird exclusion methods may include installation of exclusion netting, removing/knocking down nests before they contain eggs, or other methods approved by the California Department of Fish and Wildlife. Installation of exclusion netting shall occur outside of the typical nesting season (i.e., implement exclusion methods from September 2 to February 14).

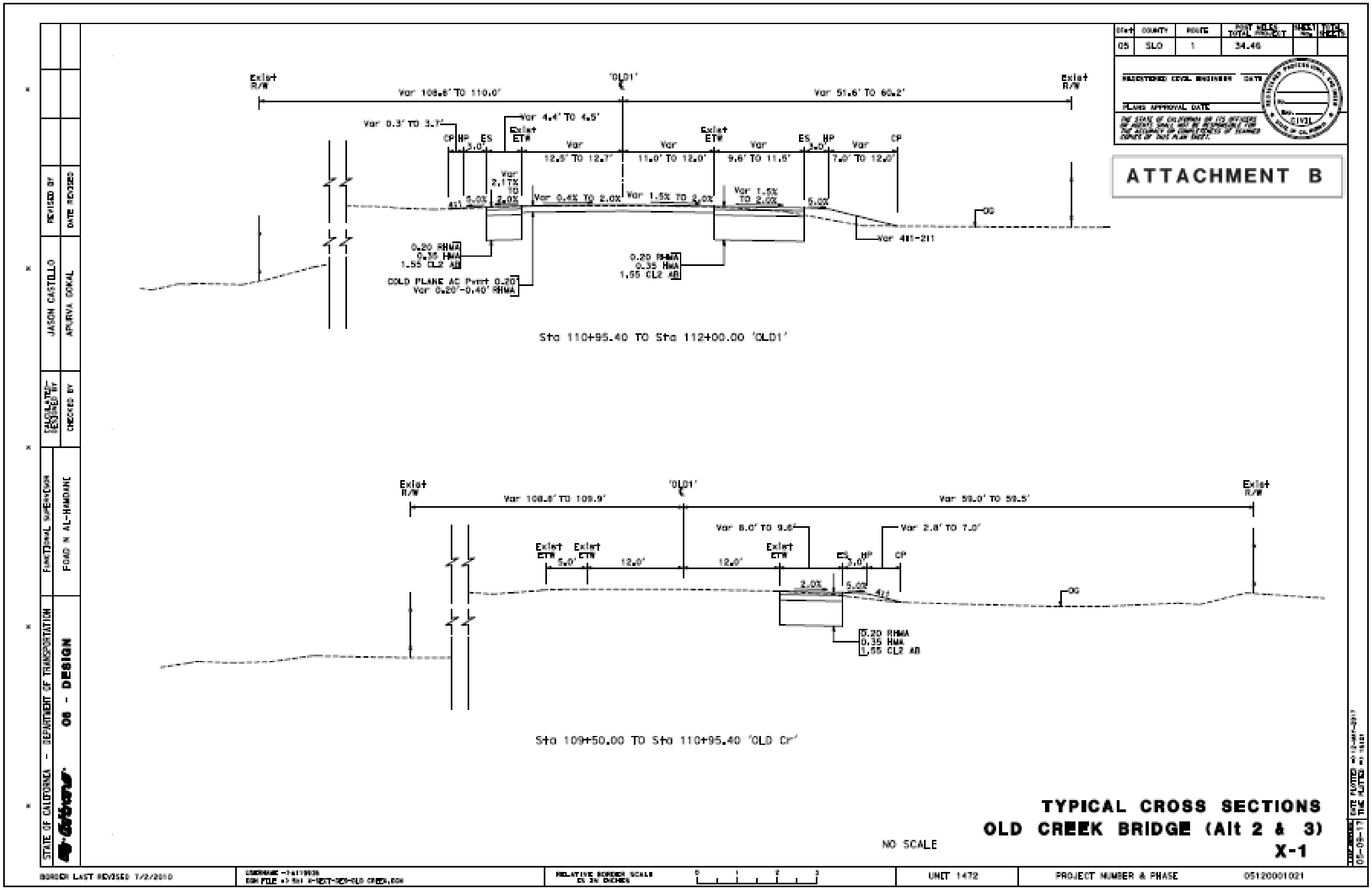
I. Measures for Pallid Bat, Townsend's Big-eared Bat, Fringed Myotis, and Yuma Myotis (2.3.4)

1. It is recommended that bats be passively excluded from the existing bridge with exclusion netting prior to its demolition. Installation of exclusion netting shall occur outside of the typical maternity roosting season (i.e., implement exclusion from September 2 to February 14).

2. If tree removal is required during the bat maternity roosting season (February 15 to September 1), a bat roost survey shall be conducted by a qualified biologist within three (3) days prior to removal. If an active bat roost is found, Caltrans shall coordinate with the California Department of Fish and Wildlife to determine an appropriate buffer based on the habits and needs of the species. Readily visible exclusion zones shall be established in areas where roosts must be avoided using Environmentally Sensitive Area fencing. Work in the buffer area shall be avoided until a qualified biologist has determined that roosting activity has ceased. Active bat maternity roosts shall not be disturbed or destroyed at any time.

Appendix D Project Mapping





ATTACHMENT B
Sta 110+95.40 TO Sta 112+00.00 'OLD1'
Sta 109+50.00 TO Sta 110+95.40 'OLD Cr'
TYPICAL CROSS SECTIONS
OLD CREEK BRIDGE (Alt 2 & 3)
X-1
NO SCALE
UNIT 1472
PROJECT NUMBER & PHASE
0512000102
BORDER LAST REVISED 7/2/2010

List of Technical Studies that are Bound Separately

Hazardous Waste Report, December 1, 2015

Historic Property Survey Report, December 6, 2016

Water Quality Assessment, March 8, 2017

Paleontology Review, April 5, 2016

Air Quality Report, February 13, 2017

Noise Study Report, February 13, 2017

Visual Assessment, March 30, 2017

Preliminary Foundation Report, January 30, 2017

Location Hydraulic Study, March 1, 2017

Natural Environment Study, March 24, 2017

Historical Property Survey Report, January 23, 2017

Preliminary Site Investigation (Geophysical Survey)

Preliminary Seismic Recommendations, March 28, 2014

Preliminary Foundation Report, January 30, 2017

Appendix E Project Mapping

EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

KEN ALEX
DIRECTOR

March 15, 2018

Julie McGuigan
California Department of Transportation, District 5
50 Higuera St
San Luis Obispo, CA 93401

Subject: Old Creek Bridge
SCH#: 2018021018

Dear Julie McGuigan:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on March 14, 2018, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Document Details Report
State Clearinghouse Data Base

SCH#	**2018021018**
Project Title	Old Creek Bridge
Lead Agency	Caltrans #5
Type	**MND** Mitigated Negative Declaration
Description	Note: Review Per Lead Caltrans is proposing to widen the existing inside and outside shoulders to 5.0' and 8.0', respectively, and upgrade the guardrail on northbound Old Creek Bridge on Route 1 at PM 34.46. The project also proposes to address the seismic deficiencies of the existing bridge by retrofitting the existing structure or replacing the bridge with a new structure.

Lead Agency Contact

Name	Julie McGulgan		
Agency	California Department of Transportation, District 5		
Phone	805-549-3118	***Fax***	
email			
Address	50 Higuera St		
City	San Luis Obispo	***State*** CA	***Zip*** 93401

Project Location

County	San Luis Obispo			
City				
Region				
Lat / Long				
Cross Streets	Hwy One			
Parcel No.				
Township	***Range***	***Section***	***Base***	

Proximity to:

Highways	One
Airports	
Railways	
Waterways	Old Creek
Schools	
Land Use	Estero Area Plan

Project Issues Aesthetic/Visual; Biological Resources; Coastal Zone; Toxic/Hazardous; Traffic/Circulation; Vegetation; Wetland/Riparian; Landuse; Cumulative Effects

Appendix F Comments and Responses

This appendix contains the comments received during the public circulation and comment period from February 8, 2018 to March 14, 2018. Each of the comments presented are followed by a Caltrans response.

SAN LUIS OBISPO BICYCLING ADVOCATES

Matt Fowler, Senior Environmental Planner
Central Coast Environmental Management Branch
Caltrans
50 Higuera St.
San Luis Obispo CA 93401
Email: matt.c.fowler@dot.ca.gov

Re: Old Creek Bridge Proposed Mitigated Negative Declaration

March 13, 2018

Dear Mr. Fowler:

The San Luis Obispo Bicycling Advocates (SLOBA) appreciates the opportunity to comment on the Proposed Mitigated Negative Declaration for widening, retrofitting or replacing the northbound Old Creek Bridge on Highway 1 near Cayucos.

People on bikes – and there are many on Highway 1 – have long recognized that the northbound Old Creek Bridge near Cayucos is substandard. We are forced to take the travel lane because the bridge is so narrow.

We believe that the Mitigated Negative Declaration is adequate for addressing all identified environmental issues and look forward to Caltrans increasing the shoulder to the standard width to improve bicyclist safety. The seismic work will make this bridge safer for all travelers of the roadway. 1-1

SLOBA is a recently formed, all-volunteer group based in San Luis Obispo that advocates for policy, projects and infrastructure that will increase trips by bike for people of all ages and abilities, with a focus on safety, health and connectivity. If you have any questions, please contact me at leabrooks332@Gmail.com.

Sincerely,
Lea Brooks
SLOBA Steering Committee Member

Response to Comment #1 from San Luis Obispo Bicycle Advocates

Response to Comment 1-1:

Thank you for supporting the project and acknowledging the project's intent to address existing issues pertaining to bicycle access and structural condition on Old Creek Bridge.

COUNTY OF SAN LUIS OBISPO
Bicycle Advisory Committee
Dale Smith, Chair
(805) 440-2412 781-2830 (staff)
email: dalesmithfarm@me.com

March 1,2018

Matt Fowler
Senior Environmental Planner
Central Coast Environmental Management Branch
California Department of Transportation
50 Higuera Street,
San Luis Obispo, CA 93401

Re: Old Creek Bridge: Initial Study with Proposed Mitigated Negative Declaration

Dear Mr. Fowler,

With this letter I am submitting comments on behalf of the Bicycle Advisory Committee (BAC) of San Luis Obispo County on the Old Creek Bridge proposed project.

Before commenting on specific aspects of the project, I want to t state that the safe and convenient bypass, or detour, for bicydists of this project during construction is paramount. The Highway One state coastal bike route is highly used year round by both locals and travelers by bicycle. The proposed bridge project for Old Creek Bridge (along with the replacement of the Toro Creek Bridge) along this segment of the highway in Cayucos is a vital safety component for the many motorist and bicycle users of the highway.

In regards to the Proposed Mitigated Negative Declaration document

Chapter 1, Proposed Project

1.2.2-Need

Agree. Safe bike travel along SR1 is essential. This bridge is currently an impediment to safe travel. **2-1**

1.30 - Project Description

Although the project, per Caltrans, will accommodate a Class III Bike Route, the bridge widening will, in reality, meet Class II bike lane standards. The BAC is pleased with this proposed outcome. **2-2**

1.4.1 - Build Alternatives

The BAC prefers Alternative 2: A new bridge with full bike accommodation with a 5 feet wide inside shoulder and a right shoulder width of 11 feet- 6 inches. This alternative also best accommodates bicycle traffic during bridge construction. 2-3

Additional comment - Cass Avenue/SR1 connection:

While not directly a part of the proposed Old Creek Bridge project, the BAC would like Caltrans to consider the approach from Cass Ave. onto the southbound lane of SR1. The existing approach is steep and hazardous for many bicyclists. Cass Ave., connecting via 23rd St. and Pacific Avenue, is highly used by bicyclists as an alternative to eyeing SR1 through Cayucos. It may be possible that by installing a retaining wall, or other solution, that the gradient of the Cass Ave. approach to SR1 could be reduced, and sight distance improved, as this access merges at the north end of the Old Creek Bridge. Including this project with the Old Creek Bridge project would make for a much safer setting at the bridge and Cass Ave. location. 2-4

Thank you for the opportunity to comment on this important project improvement for SR1 in Cayucos.

Sincerely,

Dale Sudiff, Chair
San Luis Obispo County Bicycle Advisory Committee

Response to Comment #2 from San Luis Obispo County Bicycle Advisory Committee (BAC)

Response to Comment 2-1:

Thank you for supporting the project's need to address the non-standard bridge rails and shoulder widths along Route 1 at Old Creek Bridge.

Response to Comment 2-2:

Although the project's design contains dimensions that are similar to standards required for a Class II bike lane, the completed project will implement a Class III bicycle route as the shoulders will primarily serve as shared space for both motorist and bicyclist use.

Response to Comment 2-3:

Alternative 3 is the preferred project alternative and it is identical to Alternative 2, except for the bridge construction method. Alternative 3 will use pre-cast/pre-stressed (PC/PS) voided slab for construction, which would not require falsework to support the new bridge soffit during construction.

Response to Comment 2-4:

Thank you for your informing us of your concerns with Cass Avenue. At this time Caltrans is not considering modifying the intersection of Southbound Route 1 at Cass Avenue as it is beyond the scope of this project, which is limited to the northbound bridge with regard to improving bridge rails and shoulder widths facilitated by bridge replacement.

Reducing the grade at Cass Avenue, or providing a flatter bike route, would involve significant changes. At first glance the options would be 1) Raise the profile of Route 1 at Cass Avenue, 2) Lower Cass Avenue, or 3) provide a separate bridge/path for bike/pedestrian traffic west of the southbound bridge from the top of Cass Avenue. A retaining wall or another minor limited option is not likely to help as it would not change the underlying issue of the change in elevation from the top of Cass Avenue to the intersection of Southbound Route 1. All the options mentioned would have significant cost, right of way, traffic, visual, and other environmental impacts. It may be possible to vertically separate the northbound and south bound lanes so that only the southbound lanes would be raised, but that would still create the impacts listed earlier and add a reduction in coastal access from the northbound side.

STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., Governor

CALIFORNIA COASTAL COMMISSION
CENTRAL COAST DISTRICT OFFICE
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
PHONE: (831) 427-4863
FAX: (831) 427-4877
WWW.COASTAL.CA.GOV

March 21, 2018

Matthew Fowler
California Department of Transportation
50 Higuera Street
San Luis Obispo, CA 93401

Subject: Old Creek Bridge (Northbound) Replacement Project SCH# 2018021018

Dear Matthew:

We received the above-referenced Initial Study/Mitigated Negative Declaration (IS/MND) for a proposed replacement bridge located on Highway 1 in the community of Cayucos, San Luis Obispo County. Specifically, Caltrans is proposing to widen the existing inside and outside shoulders of the northbound bridge (Old Creek Bridge) to five feet and eight feet, respectively, upgrade the guardrail, and address seismic deficiencies by replacing the existing northbound bridge.

We have reviewed the IS/MND and would like to provide our comments which focus on core Coastal Act policies (such as coastal access, hazard avoidance, and protection of environmentally sensitive habitat areas (ESHAs) and sensitive species), as well as on the alternatives, including the "single-span structure alternative" described in the IS/MND.

In terms of policy consistency, both the Coastal Act and San Luis Obispo (SLO) County Local Coastal Program (LCP) contain policies requiring avoidance of fill of wetlands and ESHA, and compensatory mitigation when avoiding such fill is infeasible, (including Coastal Act Section 30233 and LCP ESHA Policy 13), and also require that new development provide maximum coastal access (including Coastal Act Section 30212 and LCP Public Access Policy 2). In addition, the Coastal Act and LCP require that new development assures continued biological productivity (e.g., Coastal Act Sections 30230 and 30231 and LCP ESHA Policy 20) and prohibit shoreline armoring in new development (e.g., Coastal Act Section 30235 and LCP Hazard Policies 1 and 4), except in certain cases.

In this case, it appears that full avoidance of fill in wetlands and ESHA is **only ensured** with the single-span structure alternative (described on page 6 in the IS/MND). In general, and as illustrated below, this alternative should be more fully explored. It also appears that **Alternative 3** would reduce the amount of fill in wetland and ESHA, compared to Alternatives 1 and 2, because the "bent column support system" along with the physical concrete columns/piles in the creek bed would be reduced from four to two, and this alternative would also reduce creek impacts during construction because Alternative 3 does not require falsework. 3-1

In addition, the IS/MND notes that wetland compensatory mitigation would be "via restoration (reestablishment)." Please note that compensatory mitigation must result in a 3:1 *increase* of wetland acreage. Finally, the IS/MND states on page vi that "(s)ound attenuating devices shall be 3-2

used during the pile driving…if feasible." Given that there are sensitive species in the creek, and that dewatering activities will be required during construction, additional information should be provided describing how negative impacts can be avoided/mitigated under all construction scenarios. 3-2

In terms of public access, the replacement bridge proposes a five-foot-wide inland shoulder and an eight-foot-wide outside shoulder. While eight-foot-wide shoulders are standard, six-foot-wide shoulders (or less) are often employed in certain situations of the coastal zone to reduce coastal resource impacts, such as scenic and visual impacts and terrestrial and marine habitat impacts. In this case, the project alternatives should be evaluated to determine if a six-foot-wide shoulder (or less) will reduce impacts either during construction or permanently, but still allow for safe bicycling and pedestrian access. In addition, page 4 of the IS/MND discusses Alternative 2, which requires the construction of an 11 ½-foot-wide shoulder to allow for bike traffic during construction. We note that this is a sizeable increase in shoulder width, even from the standard shoulder width of eight feet. Please evaluate if there are other temporary options to address bike traffic during the construction period which may involve a reduced shoulder width, which may reduce impacts. 3-3

Lastly, in terms of Hazards, the IS/MND notes that "Rock slope protection (RSP) that exceeds more than 10' beyond the footprint of the new bridge shall be planted with willows." However, any RSP should be avoided in the creek and creek banks, pursuant to the Coastal Act and LCP. Thus, alternatives should investigate the feasibility of new bridge abutments that would be placed outside (and above) the creek banks, and placed without the use of RSP either as part of the design, or for protection in the future due to expected sea level rise and climate change issues over the next 75-100 years. If there is supportable evidence that not including RSP as part of the project is infeasible, then the RSP must be minimized and all impacts from it mitigated. 3-4

In terms of alternatives described, IS/MND Section 1.4.4 *"Alternatives Considered by Eliminated from Further Discussion"* assesses the "single-span structure alternative." While the IS/MND provides a list of reasons for why this alternative has been eliminated, including because it will result in additional impacts to the adjacent roadway inn both directions, we believe that the stated reasons require additional analysis, and we have the following comments and questions.

As stated in the IS/MND, a single-span structure would require an estimated soffit depth of nine feet, which would impact the northbound lane in the following ways:

1. **The northbound lane's profile would be raised by six feet-three inches or more.**
2. **Profile raising would impact roadway height and construction limits, increasing the construction limits by an additional half-mile in each direction. The 13th Street off-ramp and Studio Drive intersection would likely be impacted as well.**

3. There would be a visual impact (decreased ocean view) to residents/persons located east of the northbound lanes.
4. A retaining wall would be required in the median between the southbound and northbound lanes, with a half-concrete barrier, to retain the embankment of the higher northbound lanes. This would be an additional visual impact to the area.
5. A local road intersection (Cass Avenue) would lose its ability to make left turns onto the SR 1 northbound lanes due to the resulting roadway height differences and retaining wall. This would increase travel distance and time for local travelers.
6. Local traffic would increase as drivers would no longer be able to use Cass Avenue for beach access and instead would have to go to the 13th Street interchange.
7. Beach access from 13th Street would be impacted as the existing left-turn lane at this location would no longer be available.

We would like to provide our thoughts on each one of the above stated impacts.

1. We assume the estimated soffit depth and additional bridge profile height is needed to support the weight of the single-span bridge. Are there any feasible alternatives to a nine-foot soffit depth? For example, would a steel span or some other material avoid the need for a soffit that deep? In addition, what is the current status of the southbound bridge in this location? Are there plans for retrofit of replacement of the southbound bridge in the near term? 3-5
2. This implies that the 13th Street off-ramp and Studio Drive intersections would be negatively impacted but does not provide any identifiable impacts. Please provide the impact to the off-ramp to the north and the Studio Drive intersection to the south, and any provisional measures possible that would reduce these impacts. 3-6
3. This implies that because the bridge would need to be raised over six feet that there would be a visual impact to residents/persons located east of the northbound lanes. However, there are no homes east of this bridge, only a cemetery. In addition, the increased height of the bridge would improve the views of motorists, bicyclists, and others, by providing an *increased* ocean view. 3-7
4. This visual impact is not well described. Would these retaining walls be needed on both ends of the northbound bridge? How tall would they be? How long? Could they be screened with native drought-tolerant vegetation? Could they be painted an earthtone color to reduce their visual impact? Would the retaining walls be visible from the beach? 3-8

Would they become hidden if the southbound portion of the bridge was retrofitted or replaced in the near term?[1] 3-8

5. This implies that the increased height of the bridge and the required retaining walls would prevent motorists and bicyclists and others from turning left onto Highway 1 from Cass Avenue. While this may be true, it is not supported by facts and doesn't provide alternatives that may reduce this impact. For example, where could motorists and bicyclists and others make a left onto Highway 1 nearby? How far would they have to travel to get there? In any event, it seems that turning left across southbound Highway 1 and merging with oncoming northbound vehicles may be dangerous in and of itself. Would this inability to turn left improve safety? 3-9

6. This implies that motorists and bicyclists and others would be precluded from turning left onto Cass Avenue, due to the increased height of the bridge and the retaining walls, to access the beach and Morro Strand State Beach Day Use Area. While this may be true, the exit at 13th Street is less than ¼ mile north and provides a safer left turn, since it utilizes an off ramp and an underpass to cross Highway 1. It seems that this option would be a safer way to access Morro Strand State Beach. 3-10

7. This impact is unclear. We do not understand how a single-span structure alternative would impact beach access from 13th Street. Please clarify. 3-11

In summary, core Coastal Act and LCP policies require additional information. Bridge alternatives that include the lack of columns/piles in the creek or creek banks, and which are supported by abutments only, should be more fully explored. In addition, such alternatives should investigate the feasibility of abutments that would be placed outside (and above) the creek banks and, regardless of location, placed without the use of RSP either as part of the design, or for protection in the future due to expected sea level rise and climate change. Only with this information can a thorough review of alternatives be accomplished.

Please do not hesitate to contact me at (831) 427-4863 if you have any questions regarding the above.

Sincerely,

Daniel Robinson
Coastal Planner
Central Coast District Office

[1] In addition, does Caltrans have plans to retrofit or replace the southbound bridge in this location? Would replacing the southbound bridge affect the viability of the bridge alternatives discussed in the IS/MND, including the single-span structure alternative?

Response to Comment #3 from California Coastal Commission (CCC)

Response to Comment 3-1:

Caltrans does not consider a single span structure a viable option, due to the resulting need to raise the profile of the northbound lanes by as much as 7 feet. This would further necessitate the need to reconstruct approximately 1900 feet of the SR-1 northbound lane (including the bridge) in comparison to only replacing the existing 170 feet long northbound Old Creek Bridge. The installation of multiple retaining walls would also be required to support the raised roadway profile. In addition, the current horizontal alignment of northbound SR-1 would need to be modified to provide the space needed to install the necessary retaining walls.

A single span structure alternative was not included as a proposed alternative as it was anticipated that it would have resulted in greater impacts to environmental resources, greater aesthetic impacts to the visual landscape and potentially create impacts to traffic and travelers in the surrounding vicinity. Although the single span structure may provide full avoidance of wetlands and ESHA, the single span structure would produce more impacts, generate greater disturbance and have a higher cost than any of the proposed alternatives.

At this time Alternative 3 is the preferred project alternative.

Response to Comment 3-2:

The Natural Environmental Study (NES) prepared for the project provided the technical basis for the biological resource information included in the IS/MND. Specifically, the NES states:

"Compensatory mitigation is proposed at a 1:1 ratio (acreage) for temporary impacts and at a 3:1 ratio (acreage) for permanent impacts to riparian and freshwater marsh vegetation via restoration (re-establishment)." (NES p.50)

The concept of "re-establishment" as mitigation is consistent with the Regional Water Quality Control Board's (RWQCB) definition as used in their Section 401 Water Quality Certification process:

"Re-establishment means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions." (RWQCB Guidance)

For the Old Creek Bridge Project, Caltrans proposes to restore temporary impacts to riparian and freshwater marsh wetland ESAH on a 1:1 basis (e.g., on-site, in-kind re-establishment). This would effectively restore to pre-construction conditions the temporarily disturbed areas.

For permanent impacts, Caltrans proposes to implement 3:1 re-establishment to offset permanent impacts to riparian and freshwater marsh ESHA. Based on the current project design for Alternative 3, it is estimated that 0.037 acre of net permanent impacts to these ESHA within CCC jurisdiction would be permanently impacted/displaced by permanent structures. As a result, Caltrans proposes to implement re-establishment of 0.111 acre of these ESHA via planting/restoration along Old Creek, which would represent a net increase in acreage of these ESHA.

For the proposed project, it is assumed that the pile casings would be driven no closer than 85 feet (26 meters) to the closest dewatering dam. There may be an additional rate of attenuation of up to 5dB with the use of dewatered cofferdams that could reduce sound levels below estimates made in the analysis. This additional rate of attenuation should add confidence that the analyses for all design options do not under-estimate sound levels but rather likely over-estimate sound levels.

The NMFS Biological Opinion states that although juvenile steelhead may be subjected to elevated sound levels at a distance of 344-feet from the driven pile, NMFS estimates that only a very small number of steelhead may be injured or killed because fish are expected avoid areas of elevated sound and steelhead abundance in the action area is expected to be low, if present. NMFS does not expect the exceedance of the noise threshold to result in the injury or mortality of steelhead because the nearest pile will be driven within the dewatered work area, and therefore steelhead would not be present. Beyond the range of physical injury, NMFS estimates steelhead may demonstrate temporary abnormal behavior indicative of stress or exhibit a startle response. Habitat conditions of similar quality found upstream of the action area will provide startled steelhead sufficient area to escape. Elevated sound levels are not expected to result in significant effects on individuals temporarily displaced during the 4-day period of pile driving.

Monitoring of the underwater sound pressure shall be conducted during all impact driving. If the results of underwater sound pressure monitoring show that sound levels upstream and downstream of the dewatered area are higher than anticipated levels, the District Biologist shall contact NMFS to determine if additional measures are necessary.

Response to Comment 3-3:

State Route 1 has been identified as an expressway and that the project will conform to current standard requirements associated with expressways. As an expressway, SR-1 will require 10 foot outside shoulders width.

In order to accommodate access for bicycle traffic and to provide staging space for construction, the northbound bridge is currently designed with 11.5 foot wide outside shoulders.

At this time investigations are being carried out to identify any temporary detours for bicycle traffic, as well as any alternate options for staging space during construction.

If a temporary detour for bicycle traffic is feasible and there are feasible options for staging space, the project may adopt 10 foot outside shoulders for the northbound bridge.

Response to Comment 3-4:

Caltrans District Hydraulics has concluded that since Old Creek does not flow unless the upstream dam at Whale Rock Reservoir overflows, it would be possible to forgo placing additional RSP to protect the new bridge abutments and slope.

For areas where the existing slopes are disturbed during construction, a "Geo Mat" (made of a synthetic or biodegradable membrane used for erosion control on slopes) could be used and buried within the rebuild slope for stability.

Response to Comment 3-5:

For the length of this bridge, there would be no appreciable difference between the depth of steel girders or precast concrete girders. Furthermore, steel would present additional material cost, as well as ongoing maintenance efforts and cost to protect the steel bridge structure against corrosion induced by salts and chlorides found in the air and water associated with coastal regions.

Caltrans monitors bridge conditions at the state and local level. The most relevant rating system for this effort is the bridge Sufficiency Rating (SR), which is a Federally Highway Administration (FHWA) bridge rating. Highway bridges considered structurally deficient or functionally obsolete and with a SR of 80.0 or less are proposed to be placed on a selection list. Those bridges appearing on the list with a SR of less than 50.0 would be eligible for replacement or rehabilitation while those with a SR of 80.0 or less would be eligible for rehabilitation.

The existing northbound bridge at Old Creek has a Sufficient Rating of 57.4 and has been determined to be structurally deficient, requiring rehabilitation or replacement. After examinations were carried out on the existing northbound bridge, it was determined that the prudent course of action was to replace the whole structure.

The southbound bridge at Old Creek currently has a Sufficient Rating of 94.0, and as such is not eligible for rehabilitation or replacement. Caltrans does not have a project to retrofit or replace the southbound bridge.

Response to Comment 3-6:

Consideration of a single span structure will require raising the northbound SR-1 profile by a minimum of 6.25 feet. At the Cass Avenue intersection, the vertical difference between the northbound and southbound SR-1 will be approximately 7 feet in elevation, which requires removing the access between Cass Avenue and northbound SR-1.

Removing the access to Cass Avenue from northbound SR-1 would require travelers to rely on the 13th Street interchange to access the areas surrounding Cass Avenue. Removing the access to northbound SR-1 from Cass Avenue would force residents who rely on the Cass Avenue interchange to instead rely on the interchange at Cayucos Drive, located approximately 7,500 feet north of Cass Avenue, as there is no northbound onramp on 13th Street. It is expected that the 13th Street interchange and the Cayucos Drive interchange will have to service a higher volume of traffic than normal, which could potentially generate traffic related impacts to the area (longer travel times, congestion, etc.)

For travelers on northbound SR-1, the access to Cass Avenue provides the most direct route to the Morro Strand State Beach day use area and local beach access. If the Cass Avenue access from northbound SR-1 is removed, travelers would be required to add approximately 5,500 feet to their travel, requiring them to overshoot Cass Avenue, exit on 13th Street and navigate southward on surface street through Cayucos.

Alternatively, it is possible that travelers on northbound SR-1 may not want to travel the extra 5,500 feet to the day use area and may instead rely on Dog Beach for their beach access. Dog Beach is located at the intersection of Studio Drive and SR-1 and is accessible to both northbound and southbound travelers. This could potentially increase visitation to Dog Beach while simultaneously decreasing visitation to Morro Strand State Beach day use area. The increase in traffic at Studio Drive could also potentially generate traffic related impacts to the intersection and surrounding area. For more details please refer to Section 6-1 Alternative Considered but Eliminated from Further Discussion Prior to Draft Environmental Document.

Response to Comment 3-7:

Extensive modification to the existing viewscape of the area would be necessary to accommodate the single span structure. These modifications would likely include, but not be limited to; changes in topography, vegetation removal, increase in reflectivity, addition of built elements, and visual consistency with the surrounding area. Although some of these modifications may include aesthetic treatments, it would be evident that the viewscape has been extensively altered and modified to accommodate the single span structure.

- Views of the ocean currently are not available from Ocean Avenue in the vicinity of the bridge, however the ocean can be seen from the elevated areas of the Cayucos-Morro Bay Cemetery. As a result, some of these ocean views would be blocked by construction of a taller structure.
- A raised bridge structure would have an adverse effect on views to coastal resources from Ocean Avenue and visitors to the Cayucos-Morro Bay Cemetery due to loss of visual access to the riparian forest and wetland west of the highway. In addition the additional bulk of the larger bridge would increase the built, urban scale of the project and as a result would adversely alter the visual character of the site and its surroundings.

Response to Comment 3-8:

The single span structure would require the installation of retaining walls in order to properly raise the profile of the existing northbound SR-1. Retaining walls would need to be constructed in between the northbound and southbound lanes, on the eastern edge of the northbound lane and above the banks of Old Creek.

The median retaining wall in between the northbound and southbound would need to be approximately 1,070 feet long. The median retaining wall would extend 530 feet north and 540 feet south of the creek. The height of the median retaining wall would vary from 2 to 7 feet to accommodate the new profile of northbound SR-1 and the single span structure. In addition, a median barrier would need to be placed atop the median retaining wall. The median barrier would be approximately 1,520 feet long, extending 680 feet north and 840 feet south of the creek. The height of the median barrier may vary from 3.5 to 4.5 feet along its entire length. A retaining wall would also be required on the east side of SR-1, along the outside shoulder of the northbound lanes. A 200 to 350 feet long retaining wall would need to be installed south of Old Creek, along the outside shoulder of the northbound lane, but within existing Caltrans right-of-way. The height of this retaining wall would also vary from 2 to 7 feet as a result of the new profile of northbound SR-1 to accommodate the single span structure. A soldier-pile retaining wall approximately 350 feet long would also need to be installed north of Old Creek, parallel the top of the creek embankment. This retaining wall is needed in order to accommodate the additional width required for the single span structure and the height of the retaining wall would vary to support the raised profile of northbound SR-1.

- Retaining walls would not be visible from the beach area.
- The median in the vicinity of the bridge is too narrow to safely accommodate screen planting in that area.
- Retaining walls could be textured and colored to help reduce noticeability, however those treatments would not sufficiently disguise the inherent visual scale and increased urban appearance of a larger bridge structure.
- If the southbound bridge structure were raised in the future, the retaining walls in the median would be screened from off-site views, however they would still be partially visible from the new southbound lanes.

As it has been previously mentioned, there are no near future plans to retrofit the southbound bridge structure or roadway.

Response to Comment 3-9 & 3-10:

The consideration of the single span structure requires raising the profile of the northbound SR-1. The required design profile would result in a 6.9 to 7.1 feet height difference between the existing and the new northbound SR-1, resulting in the removal of the access between Cass Avenue and northbound SR-1.

Removing the northbound SR-1 access to Cass Avenue, travelers on northbound SR-1 would need to rely on the interchange at 13th Street, which is located approximately 2,100 feet to the north. For northbound SR-1 travelers trying to reach Morro Strand State Beach day use area, it would add approximately 5,500 feet to their travel, requiring them to overshoot Cass Avenue, exit on 13th Street and navigate southward on surface streets through Cayucos.

Removing the access between Cass Avenue and northbound SR-1 would further restrict access to northbound SR-1 in the vicinity. Travelers trying to access northbound SR-1 would need to use the on-ramp at Cayucos Drive interchange which is located approximately 7,500 feet to the north of Cass Avenue interchange. There is no northbound SR-1 access on 13th street. Visitors of Morro Strand State Beach day use area who wish to head north on SR-1 would need to navigate through surface streets to reach the on-ramp at Cayucos Drive interchange.

Removing the access between Cass Avenue and northbound SR-1 would force visitors of the area to rely on existing surface streets, which may not be capable of handling increased traffic and would have a negative impact on the community of Cayucos. Overall, removing the access between Cass Avenue and northbound SR-1 would limit visitor's access to Cayucos and its beaches, and limit Cayucos residents from accessing SR-1 efficiently.

A Collision Analysis was completed in March 2018 by District 5 Traffic in the vicinity of Cass Avenue Intersection. The analysis covered data for a three year period from January 1, 2013 to December 31, 2015. During the study period there were no collisions associated with intersection of SR-1 and Cass Avenue. There was one recorded accident in the vicinity, and the collision was at the 13th Street northbound SR-1 off-ramp. Closing the northbound SR-1 Cass Avenue access and redirecting travelers to the 13th Street intersection would raise its traffic volume and increase the potential for collisions.

Without a single reported collision in the preceding 10 year period at the northbound SR-1 access to Cass Avenue, it is erroneous to assume that the intersection is inherently dangerous by design. While Caltrans maintains the right to reduce or close access to the highway, public input is considered and the lack of a documented safety issues would not encourage Caltrans close the northbound access to Cass Avenue.

Response to Comment 3-11:

Consideration of a single span structure will require raising the northbound SR-1 profile by as much as 7 feet. At the Cass Avenue intersection, the vertical difference between the northbound and southbound SR-1 will be approximately 7 feet in elevation, which requires removing the access between Cass Avenue and northbound SR-1.

The closure of the Cass Avenue access from the northbound SR-1 could potentially impact the traveling public who are trying to access the beaches in the vicinity. It is

currently estimated that the traveling public would need to travel an additional 5,500 feet to reach the Morro Strand State Beach day use area if the northbound access to Cass Avenue was removed and had to rely on the 13th Street interchange.

In addition, removing the access between Cass Avenue and northbound SR-1 would alter multimodal traffic patterns, lengthen the time and distance traveled, increase traffic on the 13th Street interchange, and potentially impact other local roads. All of which could contribute to impacts to beach access.