

Davenport Culverts Replacement Project

Culverts along a 4-mile section of State Route 1,
just north of the town of Davenport in Santa Cruz County

District 5–SCR–1

PM 32.12, PM 33.90, PM 34.15, PM 35.49

Project ID: 0512000069

Project EA: 05-0J200

Initial Study with Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation

September 2019



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 associated with the Davenport Culverts Replacement Project on State Route 1, in San Cruz County, California. Caltrans is the lead agency under the National Environmental Policy Act (known as NEPA) and Caltrans is the lead agency under the California Environmental Quality Act (known as CEQA).

The Draft Initial Study with Proposed Mitigated Negative Declaration was circulated for public review and comment from June 27, 2019 to July 29, 2019. A Notice of Intent to Adopt a Mitigated Negative Declaration, as well as an offer to hold a public meeting was published in the local newspaper (Santa Cruz Sentinel) on Thursday, June 27, 2019. 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 are in the vicinity of the project area. Comments received during the public review period and their response are provided in Chapter 4, Comments and Coordination.

The project has completed the environmental compliance with the circulation of the draft 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 the document as well as the technical studies are available at:

- Caltrans District Office at 50 Higuera Street, San Luis Obispo, California 93402

Electronic copies of this document can be requested from:

- Caltrans District 5 Public Information Office
(805) 549-3111
Info-d5@dot.ca.gov

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, Attention: Matthew Fowler, Central Region Environmental, 50 Higuera Street, San Luis Obispo, CA 93401; 805-542-4603 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

SCH# 2019069108
05-SCR-01-PM 32.12, 33.90, 34.15, 35.49
Project ID: 0512000069
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Culvert replacement project at four locations along State Route 1,
just north of the community of Davenport in Santa Cruz County

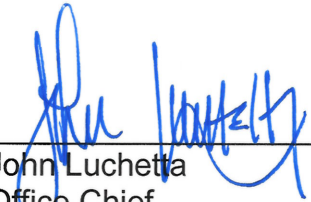
**INITIAL STUDY
with Mitigated Negative Declaration**

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

THE STATE OF CALIFORNIA
Department of Transportation

9/27/19

Date of Approval



John Luchetta
Office Chief
Central Region Environmental
California Department of Transportation
CEQA Lead Agency

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Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) will upgrade four culverts on State Route 1 in Santa Cruz County between the community of Davenport and Waddell Creek at post miles 32.12, 33.90, 34.15 and 35.49. The culverts cross under State Route 1 and are adjacent to the California coast.

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 will have no effect on: existing and future land use, wild and scenic rivers, parks and recreational facilities, farmland, timberland, growth, community character, geology, soils, seismicity, topography, paleontological, cultural resources, existing and current energy use or high fire hazard zones.

The project will not create any permanent impacts due to: air quality, noise, vibration, or hazardous waste/materials.

The project will have no significant effects on: utilities, emergency services, traffic and transportation, coastal resources, water quality, stormwater runoff, or hydrology.

In addition, the project will have no significant adverse effect on biological resources or visual resources because the following measures will be incorporated as part of the project to reduce potential effects to less than significant:

Visual Measures

- Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques that save as much existing vegetation as possible will be used.
- Regrade all project-created access roads, jacking/receiving sites, and construction staging areas to match adjacent natural terrain.
- Revegetate all disturbed areas with native plant species appropriate to each specific work location.
- Color and/or darken new or replacement guardrail posts and beams to blend with the surrounding viewscape and reduce reflectivity.
- For vegetation control treatments, use a pervious surface using materials that will match the color of the adjacent dirt to the greatest extent possible.

Biology Measures

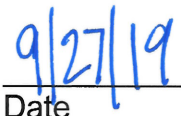
- Prior to any ground-disturbing activities, environmentally sensitive area (ESA) fencing will be installed around jurisdictional waters, coastal zone Environmentally Sensitive Habitat Areas (ESHAs), and the dripline of trees to be protected within the project limits. Caltrans-defined environmentally sensitive areas will be noted on design plans and delineated in the field prior to the start of construction activities.
- Any necessary temporary stream diversion will be timed to occur between June 1 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Stream contours will be restored as close as possible to their original condition at the end of construction.
- During construction, the staging areas will conform to Best Management Practices (BMPs) applicable to attaining zero discharge of storm water runoff. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional other waters and riparian habitat.
- Prior to construction, vegetation removal will be scheduled to occur from September 2 to February 14, outside of the typical nesting bird season if possible, 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 will be conducted by a biologist determined qualified by Caltrans no more than three days prior to construction.
- All clearing/grubbing and vegetation removal will be monitored and documented by the biological monitor(s) regardless of the time of year. Trees to be removed will be noted on design plans.
- A U.S. Fish and Wildlife Service-approved biologist will survey the project area no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work begins. The U.S. Fish and Wildlife Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The relocation site will be in the same drainage to the extent practicable. Caltrans will coordinate with the U.S. Fish and Wildlife Service on the relocation site prior to the capture of any California red-legged frogs.
- Before any activities begin on a project, a U.S. Fish and Wildlife Service-approved biologist will conduct a training session for all construction personnel. At minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to

conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished.

- The number of access routes, size of staging areas, and the total area of activity will be limited to the minimum necessary to achieve the project. Environmentally sensitive areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.
- If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.
- Only U.S. Fish and Wildlife Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
- Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Caltrans determined that it is not feasible or practical.



John Luchetta
Office Chief
Central Coast Environmental Management Branch
Central Region Environmental
California Department of Transportation



Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (known as Caltrans), as assigned by the Federal Highway Administration (known as FHWA), is the lead agency under the National Environmental Policy Act (known as NEPA). Caltrans is the lead agency under the California Environmental Quality Act (known as CEQA).

Caltrans proposes to replace existing corrugated metal pipe culverts on State Route 1 at post miles 32.12, 33.90, 34.15 and 35.49 in Santa Cruz County. The culverts sit along the California coast and cross under State Route 1, which is a two-lane conventional highway. The project is located in a rural setting, which lies between the community of Davenport and Waddell Creek. Figures 1-1 and 1-2 show the project's vicinity and location, respectively.

All of the culverts are past their design life, show evidence of corrosion and deformations, are prone to blockage, and soil has eroded at their inlets and outlets. These culvert issues could lead to the operational failure of the culverts, which in turn could threaten the operation and integrity of the highway structure. Addressing these known culvert issues would improve drainage, reduce operational maintenance and avoid the potential for failure of the highway.

The project is programmed in the 2018 State Highway Operation and Protection Program and is planned for construction during the 2021/2022 fiscal year.

Project construction is currently estimated to cost approximately \$7,521,000 and is anticipated to take approximately 120 working days to complete.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to improve the functionality of existing drainage facilities and to reduce the frequency of culvert maintenance.

1.2.2 Need

Culvert inspections have found that all of the culvert locations have exceeded their design life of 50 years, are currently deficient and exhibit signs of deterioration. Current culvert conditions could result in failure of the drainage facilities and contribute to the potential damage or failure of the highway structure.

1.3 Project Description

This section describes the actions associated with the project alternatives that were developed to meet the purpose and need of the project, while having the least environmental impacts. There are only two potential alternatives; a Build Alternative and a No-Build Alternative.

The project is located in Santa Cruz County on State Route 1, approximately 0.3 mile north of Scott Creek and 0.4 mile south of Swanton Road, between the community of Davenport and Waddell Creek. The beginning and ending limits of the project is approximately 3.7 miles. The existing roadway is a two-lane undivided highway, with approximately 11.5-foot wide lanes and 6-foot to 8-foot wide shoulders. This portion of the highway runs along the coastal bluffs of the Pacific Coastline.

The project will install new culverts of larger design to replace the existing ones. The existing culvert locations are at post miles 32.12, 33.90, 34.15 and 35.49. The new culvert design will refresh the design life, improve drainage flows, increase ability to handle larger storm events, reduce the instance of blockage and lessen the need for maintenance services. The new culverts will be installed in the same location as the existing culverts and will comply with current hydraulic and structural standards. Work sites will be located adjacent to each culvert location. Culvert work will occur beneath and off the roadway surface. It is anticipated that each culvert will be constructed one at a time.

The existing culverts will remain operational and maintained during project construction as feasible. Partial water diversions will likely be required to divert flow and to allow the worksite to remain dry during construction of the new culverts. The existing culverts at post miles 32.12, 33.90 and 34.15 will be properly sealed and abandoned once construction of the new culverts has finished. The culvert at post mile 35.49 will be removed during installation of the new culvert. Each existing culvert headwalls and wingwalls will be removed as part of the project.

To construct the project, a temporary construction easement will be required to access the worksite for each culvert location. Temporary access routes will need to be constructed for access of equipment and personnel to the worksite. Any temporary access constructed as part of the project will be removed at end of the project. Minor grading at each culvert site will also be

required. Temporary and sporadic lane closures may be required during construction to allow equipment and materials to be transported in and out of the worksite. Construction staging, and storage will occur at preexisting disturbed areas. A permanent drainage easement and new right-of-way are anticipated for project completion. No work will occur on the State Route 1 roadway, and the project is not expected to encounter any utilities.

1.4 Project Alternatives

Two alternatives are under consideration for this project: a Build Alternative and a No-Build Alternative.

The alternatives under consideration were developed by an interdisciplinary team to achieve the project purpose while avoiding or minimizing environmental impacts. Several criteria were taken into consideration when evaluating the various alternatives for the project, including the project purpose and need, project cost and environmental impacts.

1.4.1 Build Alternative

The Build Alternative will install new culverts to replace deteriorating corrugated metal pipe culverts. The new culverts will be installed using a jack and bore method, requiring the construction of a jacking/receiving site at each culvert location. The jacking/receiving site will be located on the inlet and outlet sides of the existing culverts. For all new culverts, headwalls and wingwalls will be installed at the inlets, and rock slope protection will be installed at the outlets. Culvert work will occur one location at a time.

The new culvert sizes are as follows:

1. Post mile 32.12: Install a 42-inch culvert to replace the existing 24-inch corrugated metal pipe
2. Post mile 33.90: Install a 42-inch culvert to replace the existing 30-inch corrugated metal pipe
3. Post mile 34.15: Install a 48-inch culvert to replace the existing 24-inch corrugated metal pipe
4. Post mile 35.49: Install a 60-inch culvert to replace the existing 30-inch corrugated metal pipe

Culverts 1, 2 and 3 will be installed on an alignment adjacent to the existing corrugated metal pipe. The existing corrugated metal pipe culverts will be filled with slurry cement and the ends capped with concrete; these culverts will be abandoned in place at the end of construction.

Culvert 4 will be installed on existing corrugated metal pipe alignment, and the existing corrugated metal pipe culvert will be removed during the installation of the new culvert.

At each new culvert location, grading will be required to restore the surrounding topography and to ensure existing drainage patterns are maintained. An Area of Potential Effects map for each culvert location is provided in Appendix F.

The current estimated construction cost of the Build Alternative is approximately \$7,521,000.

The estimated time for construction of the project is approximately 120 days, with project construction anticipated to occur in 2021/2022.

This project contains a number of standardized project measures that are used on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

1.4.2 No-Build (No-Action) Alternative

The No-Build Alternative will leave the existing corrugated metal pipe culverts as they are, without any changes. The culverts will continue to deteriorate, and that would not address the possible collapse of the roadway on State Route 1. The No-Build Alternative will not address the deterioration of the existing corrugated metal pipe culverts and their impaired conditions.



Figure 1-1 Project Vicinity Map

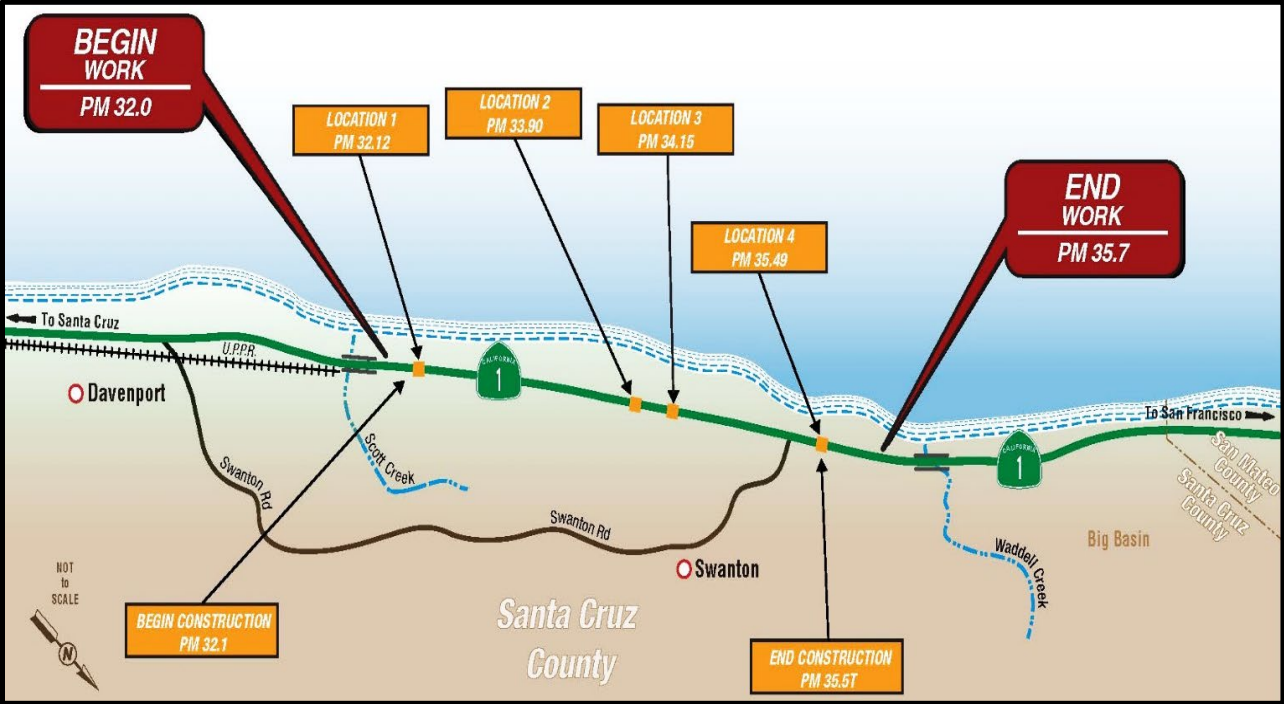


Figure 1-2 Project Location Map

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1.5 Preferred Alternative

A Build Alternative and a No-Build Alternative were the only alternatives considered for this project. During public circulation of the Initial Study with Proposed Mitigated Negative Declaration, the project received three public comments. Responses to public comments are discussed in Section 4.3. After public circulation, the two alternatives were further evaluated by Caltrans Project Development Team. Caltrans has identified the Build Alternative as the preferred alternative after consideration of the project's purpose and need, funding, schedule, construction method, and its potential to impact environmental resources.

Caltrans has concluded that the preferred alternative meets the purpose and need of the project. The Build Alternative will improve the drainage conditions at each culvert location with the installation of the upgraded culvert structure, which will reduce the potential for erosion, scour and damage to the highway structure. In addition, the new culvert structures would reduce the frequency of future maintenance. The preferred alternative will result in temporary and permanent impacts to existing environmental resources. For each environmental resource affected by the project, appropriate avoidance, minimization and/or mitigation measures will be incorporated into the project.

Caltrans determined that the No-Build Alternative does not meet the project's purpose and need, which could potentially lead to failure of the culvert structure, further erosion of the drainages and damages to the highway structure. The No-Build Alternative would also result in extensive and frequent maintenance efforts to ensure the function of each culvert.

1.6 Alternatives Considered but Eliminated from Further Discussion Prior to the Draft Initial Study

Replacement of the existing culvert has been identified as the only viable alternative.

It is anticipated that replacing the existing corrugated metal pipe culverts with larger-capacity culverts is the most appropriate course of action to ensure proper drainage in the area, maintain serviceability of the culverts, and protect the roadway on State Route 1.

Early variations of the Build Alternative had proposed different sizes for the new culverts. Replacing the existing culverts with ones of similar size was not preferred as it would not solve the issue of frequent blockage and need for proceeding maintenance. Replacing the culverts with ones of similar size would also not improve the drainage systems ability to handle large storm events. After a discussion of the potential sizes of the new culverts with

Caltrans Hydrology and Caltrans Maintenance, it was decided that the currently proposed pipe sizes would be adequate to address the needs of the project, accommodate the National Oceanic and Atmospheric Administration (NOAA) peak rainfall discharge, and accommodate potential future 100-year storm events.

1.7 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications are required for project construction and will need to be obtained prior to project construction:

- U.S. Fish and Wildlife Service – Programmatic Biological Opinion for California red-legged frog. (obtained on 09/11/19)
- U.S. Army Corps of Engineers – Section 404 Nationwide Permit for Impacts to Water of the U.S.
- Regional Water Quality Control Board – Section 401 Certification for impacts to Waters of the U.S.
- California Department of Fish and Wildlife – Section 1602 Streambed Alteration Agreement for impacts to streams
- Santa Cruz Local Coastal Program/California Coastal Commission – Coastal Development Permit

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.

- **Existing and Future Land Use:** The culvert replacement project will not alter or impact any existing land use. New culverts will be constructed in the same location as existing culverts. All culverts will be located within the existing state right-of-way. (Project Description)
- **Consistency with State, Regional, and Local Plans and Programs:** The project is designated as a Drainage System Restoration (201.151) under the State Highway Operation and Protection Program (September 2017). The project will not conflict with the existing Santa Cruz County General Plan (December 1994). The project is located in the coastal zone and is consistent with the existing Santa Cruz County local coastal program (December 1994) and Santa Cruz County Coastal Zone Regulations (March 2019). It is anticipated that a Coastal Development Permit will be required for this project.
- **Wild and Scenic Rivers:** No designated wild and scenic rivers are found within the project site, so the project will not affect any wild and scenic rivers. (National Wild and Scenic River System [www.rivers.gov/california.php])
- **Parks and Recreational Facilities:** The project limits are located along the Pacific Coast, adjacent to the bluffs and beaches. No park or recreational facilities are within the project site, and project activities will not affect any designated park or recreational facilities. (Project Description)
- **Farmland and Timberland:** No farmlands are within the vicinity of the project limits. The north end of the project limit is adjacent to the Big Creek Lumber Company. The project is limited to culvert work located within the existing state right-of-way and will not impact timberlands. Project activities will not affect any farmland or timberland within the project site. (Project Description)
- **Growth:** The project will not alter growth patterns in the region. The project will not add capacity to the roadway and will not increase

development or population. The project will be limited to replacing existing aging culverts. (Project Description)

- **Community Character and Cohesion:** The project will not impact the character or cohesion of the local community. The project will replace deteriorating culverts and improve the integrity of the roadway to ensure connection in the region is maintained. (Project Description)
- **Relocations and Real Property Acquisition:** The project will not result in relocations. It is anticipated that the project will require 1.0 acre of permanent right-of-way from the Big Creek Lumber Company. It is anticipated that approximately 1.5 acres for temporary construction easement and 1.1 acres for permanent access easement will be required from adjacent properties owned by state agencies. (Project Description)
- **Environmental Justice:** Within the project limits, the region can be described as rural, with few signs of development or residences. The project will not impact any existing businesses, residences or communities, and therefore will not create impacts that would result in environmental justice issues. Based on the above discussion and analysis, the project alternative will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of Executive Order 12898. No further environmental justice analysis is required. (Project Description)
- **Utilities and Emergency Services:** The project is not anticipated to encounter or involve any utilities during culvert-related work. Emergency Services are not expected be affected by the project because culvert work will be outside of the drivable roadway. (Project Description)
- **Traffic, Transportation, Pedestrian and Bicycle Facilities:** Project activities will occur mostly at the inlets and outlets of existing culvert locations. Culvert work will be outside of the drivable roadway, and it is anticipated that project activities will not directly affect traffic, transportation, pedestrian or bicycle use within the project site. Brief and sporadic traffic control may be required during project construction. (Project Description)
- **Cultural Resources:** Examination of cultural resource records, previous studies, maps, and historical highway documentation confirmed that the project has no potential to affect cultural resources. The project will occur on previously disturbed areas that have been previously surveyed with negative results for archaeology. Field surveys conducted in January of 2019 did not identify any archaeological materials within the project limits. Architectural and historical assessments revealed that all four of the culvert headwalls in the project area are exempt from evaluation, and there are no other potentially historic resources within the project area. It is anticipated that the project will have no potential to affect cultural resources. (Cultural Resource Review, January 3, 2019)

- **Hydrology:** The project will improve the existing hydrology at each culvert location by upgrading the existing culvert structure and installing rock slope protection to reduce scouring. None of the four culverts is located within a regulated floodplain, and a Location Hydraulic Study was not required for this project. (Hydraulic Recommendation, December 21, 2018)
- **Floodplain:** The project is not located within any Federal Emergency Management Agency-designated floodplain and is outside the 100-year and 500-year flood zones (California Department of Water Resources [<http://gis.bam.water.ca.gov/bam/>]).
- **Water Quality and Storm Water Runoff:** It has been determined that the project will not have an adverse impact to the water quality within or adjacent to the project areas. Any potential impacts will be eliminated or minimized to the maximum extent practicable by incorporation of appropriate Best Management Practices into the project. (Updated Water Quality Assessment, January 8, 2018)
- **Geology, Soils, Seismicity and Topography:** To limit disturbance to geology and soils, the project will employ a jack and bore method to install the new culvert piping. The project will not directly or indirectly cause potential substantial effects that would lead to loss of life or property. The project will not induce soil erosion or destabilize soil but will instead improve drainages to reduce potential erosions. The topography of the region will not be altered as a result of the project. (Project Description)
- **Paleontology:** All project work will take place where previous soil disturbance has occurred. There is no probability of encountering paleontological resources as a result of the project. (Updated Paleontology Review, January 8, 2018)
- **Hazardous Waste and Materials:** No hazardous materials sites exist within proximity of the project limits. The process of replacing culverts has very little potential for encountering hazardous waste. There are no expected hazardous waste impacts associated with this project. (Updated Initial Site Assessment, January 8, 2018)
- **Air Quality and Noise:** The project is not considered a Type 1 project as it will not add lanes or increase roadway capacity, thus will not permanently alter the existing air quality or noise levels in the region. No long-term impacts in terms of air quality or noise quality are anticipated. (Air Quality, Noise and Greenhouse Gas Memo, April 23, 2018)
- **Wildfire:** The project does not sit in or near a very high fire hazard severity zone. The project will not exacerbate wildfire risk in the area. (California Fire Hazard Severity Zone Map, 2019)

2.1 Human Environment

2.1.1 Land Use - Coastal Zone

Regulatory Setting

This project has the potential to affect resources protected by the Coastal Zone Management Act of 1972. This act is the main federal law enacted to preserve and protect coastal resources. The Coastal Zone Management 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. This project is subject to the County of Santa Cruz's local coastal program. Local coastal programs contain the ground rules for development and protection of coastal resources in their jurisdiction consistent with the California Coastal Act goals. A Federal Consistency Certification for the project will be needed as well. The Federal Consistency Certification process will be initiated prior to the final environmental document and will be completed to the maximum extent possible during the National Environmental Policy Act process (a federal Categorical Exclusion [CE] has been prepared for this project).

Affected Environment

The project is located on State Route 1 along the Pacific coastline in Santa Cruz County. The project lies within the coastal zone and is under the jurisdiction of the Santa Cruz County local coastal program. Figure 2-1 shows the project limits within the coastal zone.

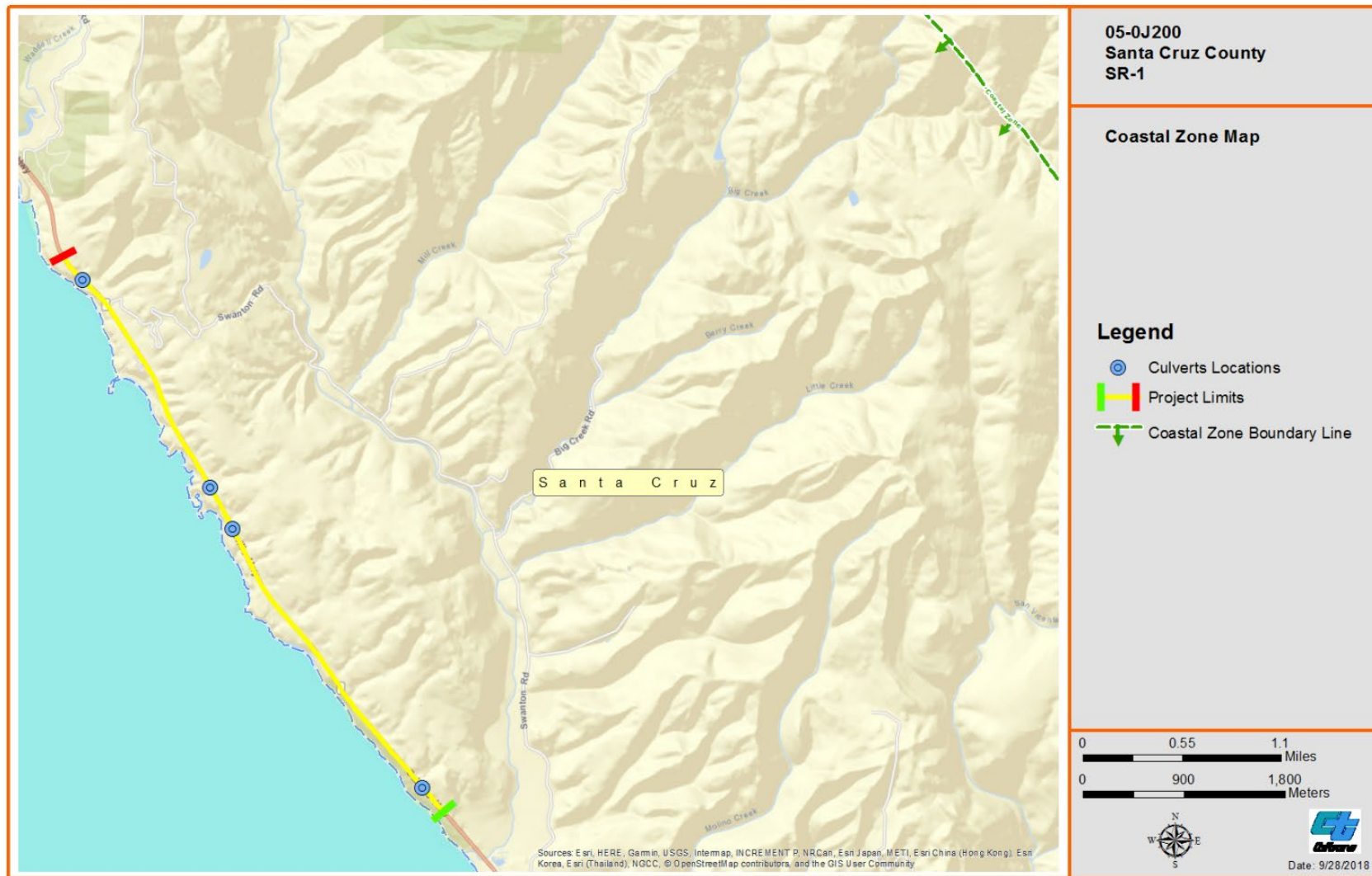


Figure 2-1 Project Location Within the Coastal Zone

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The region can be described as mostly rural. The surrounding landscape consists of rolling coastal hills that are mostly grasslands with mixed coastal vegetation and few trees. The coastline sits against cliffs and bluffs, with beach access being limited by the topography of the region. Public access to beaches is possible through designated coastal access routes. Designated coastal access in the region is not within any of the proposed construction areas for the culverts.

The designated land uses adjacent to the project limits are identified as Miscellaneous, Industrial or Vacant.

The highway runs along the tops of the bluffs and crosses several natural drainage systems that lead to the ocean. Culverts have been installed where the highway crosses over these drainage systems. The culverts locations are not visible from the roadway.

Environmental Consequences

The project involves public utility work to improve existing drainage infrastructures. Most project activities will occur within the existing state right-of-way. The project will involve the construction of new culverts at locations where culverts already exist. Construction-related activities may require brief and sporadic lane closures or the temporary use of turnouts. Much of the construction work would not be visible from the roadway.

Temporary construction access routes will be required to allow equipment and materials to reach the culverts. Vegetation surrounding the culverts will be cleared and removed during construction. On the outlet side of the new culverts, rock slope protection will be installed to dissipate the discharge flow. Minor grading may be required to maintain existing drainage patterns.

The project will not alter any existing designated coastal access within the project limits, nor will it limit coastal access to the region.

The project was reviewed and found consistent with the following policies found in the Santa Cruz County local coastal plan: Biological Diversity (5.1.1-5.1.11), Restoration of Damage Sensitive Habitats (5.1.12-5.1.15), Surface Water Quality (5.7.1-5.7.8), General Scenic Protection (5.10.2-5.10.9), Erosion (6.3.3-6.3.1), Beach Access (7.7c).

The project was reviewed and found consistent with the following Coastal Act Chapter Three Policies: Public Access (Sect. 30211), Visual Resources (Sect. 30251), Environmentally Sensitive Habitat Areas (Sect. 30240), Water Quality (Sect. 30232).

Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented for this project in order to remain consistent with both Santa Cruz County local coastal program, Coastal Act Chapter Three Policies and reduce the potential project associated impacts to less than significant under CEQA:

1. The project will use methods that will result in the least amount of possible disturbance to the surrounding area as reasonably possible to allow for project construction. Where possible, the project will use pre-disturbed areas for construction staging, storage and/or access. Areas disturbed during project construction will be restored to pre-disturbed conditions where feasible.
2. Locations where vegetation was removed as a result of project construction activities will be revegetated at the end of project construction with native vegetation appropriate for the region. Vegetation type and quantity will follow recommendations made by the Caltrans Biologist in coordination with the Caltrans Landscape Architect.
3. Any modifications to the topography as a result of construction activities will be restored to closely match pre-construction conditions at the end of project construction. Additional topography contouring may be required to better blend with the surrounding landscape as recommended by the Caltrans Landscape Architect.
4. When necessary, brief and sporadic traffic control will be implemented to allow the traveling public continued access to the highway during project construction.
5. Appropriate Best Management Practices and erosion control devices will be implemented at all times during project construction to reduce or eliminate the potential for erosion and/or non-storm water discharges.
6. Additional measures may be implemented as conditions for the coastal development permit.

2.1.2 Visual/Aesthetics

Regulatory Setting

The California Environmental Quality Act (CEQA) 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 of visual resources comes from the Visual Impact Assessment (January 4, 2019).

The project is on State Route 1 along the coast line of Santa Cruz County and consists of a two-lane conventional highway with 12-foot asphalt-paved lanes. Existing paved shoulder widths vary from 0 to 8 feet, with most 4 feet or less. Metal beam guardrails are found at various locations throughout the project limits. The highway serves local and interregional traffic, which includes mostly recreational motorists, local commuters, and limited commercial users.

The project locations are all within the coastal zone, which places an emphasis on visual quality preservation. Within Santa Cruz County, State Route 1 is defined as “eligible” in the State Scenic Highway System.

The project passes through several landscape types along its length. The landform of the region is generally characterized by gentle slopes and ravines forming a series of ridgelines and valleys as the mountains rise from the Pacific Ocean. The Pacific Ocean is visible throughout much of the project limits. The topography supports a gently sweeping roadway alignment, which produces views for the highway traveler ranging from close-in views of inland slopes to mid-range views of the ocean and wide-open panoramas.

Throughout the region, vegetation is a large component of the visual character. The highway passes through a variety of plant communities and vegetation types. Although native plant communities are the most visually prevalent, exotic plants have occasionally established themselves along the highway corridor. Landscaped plantings are usually associated with the scattered residential and commercial development along the highway.

Main developments within the project limits include the roadway itself, related roadway features (signs, guardrails, etc.), occasional residences, and tourist-oriented businesses. There are few built structures within the region, and they do not dominate views of the landscape.

Environmental Consequences

The viewer group most affected by the project are those who travel the highway and off-roadway viewers in the immediate vicinity of the project. The project components could be seen by the public due to the region's topographic variation, winding roadway, formal and informal vistas, access trails, public beaches, and campgrounds. At various locations along the project length, project activities have the potential to be seen from private residences. Pedestrians and bicyclists would have a greater visual exposure to the project components due to their slower pace of travel.

The most noticeable disturbance to the existing viewscape would be a result of temporary access roads, culvert jacking/receiving sites, and placement of new rock slope protection.

The project will replace the culverts by using the jack and bore method. This will require accessing both ends of the culvert, and the construction of a

jacking/receiving sites and staging/laydown areas. As a result, vegetation removal, excavations and grading will be required at each culvert location. As part of the project, rock slope protection will be placed at the ends of the culverts. At each of the project locations, the culverts are located well below the level of the highway. As a result, the actual culvert headwalls, jacking/receiving sites, and rock slope protection areas would have a relatively low visibility as seen from the roadway.

At each culvert location, temporary construction access roads will need to be created. Vegetation removal and slope grading will be necessary to construct the access roads. Construction of temporary access roads will require the removal of existing guardrails, and temporary traffic barriers may need to be put in place during construction. Visible earthwork scarring and vegetation loss as a result of constructing the access roads can have a high degree of noticeability when contrasted with the surrounding setting. The addition of temporary traffic barriers would also add to the degree of noticeability of the project. The access roads and other disturbed areas required as part of this project have the potential to be highly visible and distract viewers from the surrounding scenic character.

Avoidance, Minimization, and/or Mitigation Measures

The potential for visual impacts as a result of this project will be reduced and will not result in significant impacts under CEQA with the implementation of the following measures:

1. Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques that save the most existing vegetation possible will be used.
2. Regrade all construction access roads, jacking/receiving sites, and construction staging areas to match the adjacent natural terrain.
3. Revegetate all disturbed areas with native plant species appropriate to each specific work location.
4. If new replacement guardrail is required, color and/or darken the post and beams of all new guardrail to blend with the surroundings and to reduce reflectivity. The specific color will be determined by a Caltrans Landscape Architecture representative.
5. If vegetation control treatments are required, use a pervious surface, such as crushed shale, for the treatment. If shale is not feasible, the surface material should match the color of the adjacent dirt to the greatest extent possible. The specific color will be determined by a Caltrans Landscape Architecture representative.

2.2 Biological Environment

A Natural Environment Study was completed for the project in February 2019, and information from that study was used for writing the Biological Environment sections.

For this project, the biological study area is the overall “project footprint,” which includes four separate culverts replacement locations (post miles 32.12, 33.90, 34.15, and 35.49). For each culvert replacement location, biological surveys were conducted within the area of potential impacts, which is defined as all areas that may be directly, indirectly, temporarily or permanently impacted by construction and construction-related activities.

The total size of the biological study area is approximately 11.92 acres, which includes the four proposed culvert replacement locations, access roads, jacking and receiving pits, and staging/storage areas.

The biological study area occurs along a 3.37-mile segment of State Route 1, between coastal terraces on the ocean side of the highway and the steep hillsides of the coastal range on the inland side, along the Davenport coast. Elevation within the biological study area varies between about 110 feet above sea level and about 300 feet above sea level.

2.2.1 Natural Communities

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. 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 Section 2.2.5, Threatened and Endangered Species.

Wetlands and other waters are also discussed in Section 2.2.2.

Affected Environment

A Natural Environment Study was completed for the project in February 2019 and was used to complete this section.

The natural communities and vegetation within the biological study area are characterized using the naming conventions of *A Manual of California Vegetation* (Sawyer, et al 2009) and the *Preliminary Description of Terrestrial Natural Communities of California* (Holland 1986).

Within the biological study area, there is a lack of core habitat areas or key migratory pathway for regional wildlife population. There are no known wildlife corridors and the project will not impede any wildlife dispersal. Ruderal and disturbed areas are not considered sensitive natural communities and are not discussed further in this section.

Dominant species within the biological study area include the following:

- Arroyo willow (*Salix lasiolepis*)
- Poison oak (*Toxicodendron diversilobum*)
- California mugwort (*Artemisia douglasiana*)
- Poison hemlock (*Conium maculatum*)
- California blackberry (*Rubus ursinus*)
- Curly dock (*Rumex crispus*)
- Coyote brush (*Baccharis pilularis*)
- Poison oak (*Toxicodendron diversilobum*)
- Sawtooth goldenbush (*Hazardia squarrosa*)
- California sagebrush (*Artemisia californica*)
- Sticky monkeyflower (*Diplacus [Mimulus] aurantiacus*)
- Hedge nettle (*Stachys bulatta*)
- Pearly everlasting (*Anaphalis margaritacea*)
- California coffeeberry (*Frangula californica*)
- California figwort (*Scrophularia californica*)
- Coastal golden yarrow (*Eriophyllum confertiflorum*)

Weedy species found within the biological study area include the following:

- Italian thistle (*Carduus pycnocephalus*)
- Filaree (*Erodium cicutarium*)
- Pineapple weed (*Matricaria discoidea*)
- Black mustard (*Brassica nigra*)
- Poison hemlock (*Conium maculatum*)
- Rattlesnake grass (*Briza maxima*)
- Italian ryegrass (*Fescuta perennis*)

Ruderal/disturbed areas are not considered sensitive natural communities and are not discussed further in this section.

Location 1 (post mile 32.12)

The area of potential impacts at Location 1 is approximately 4.47 acres (see Figure 2-2). The area of potential impacts is in a rocky coastal, southwest-facing slope, with moderate slopes on the culvert inlet side and steep slopes on the culvert outlet side. The slope leading down from the culvert outlet drops approximately another 100 feet down to the Pacific Ocean on a steep decline.

Vegetation at the inlet side (inland) is densely vegetated with poison oak and other associated scrub vegetation that form a mosaic with riparian habitat. The vegetation can be characterized as Central Coast riparian scrub. Ruderal, weedy species dominate the road shoulders.

Vegetation at the outlet side (coastal) is dominated by disturbed habitats consisting of ruderal plants along the highway, road shoulders and disturbed areas (vehicle pullouts, trailheads, vistas, etc.). Coastal scrub habitat is best characterized as Central Coast scrub intergrade with disturbed habitats. A small stand of Monterey pine (*Pinus radiata*) trees is near the center of the area of potential impacts on the coastal side. A variety of annual grasses, flowering plants, and weeds are also spread out in the area.

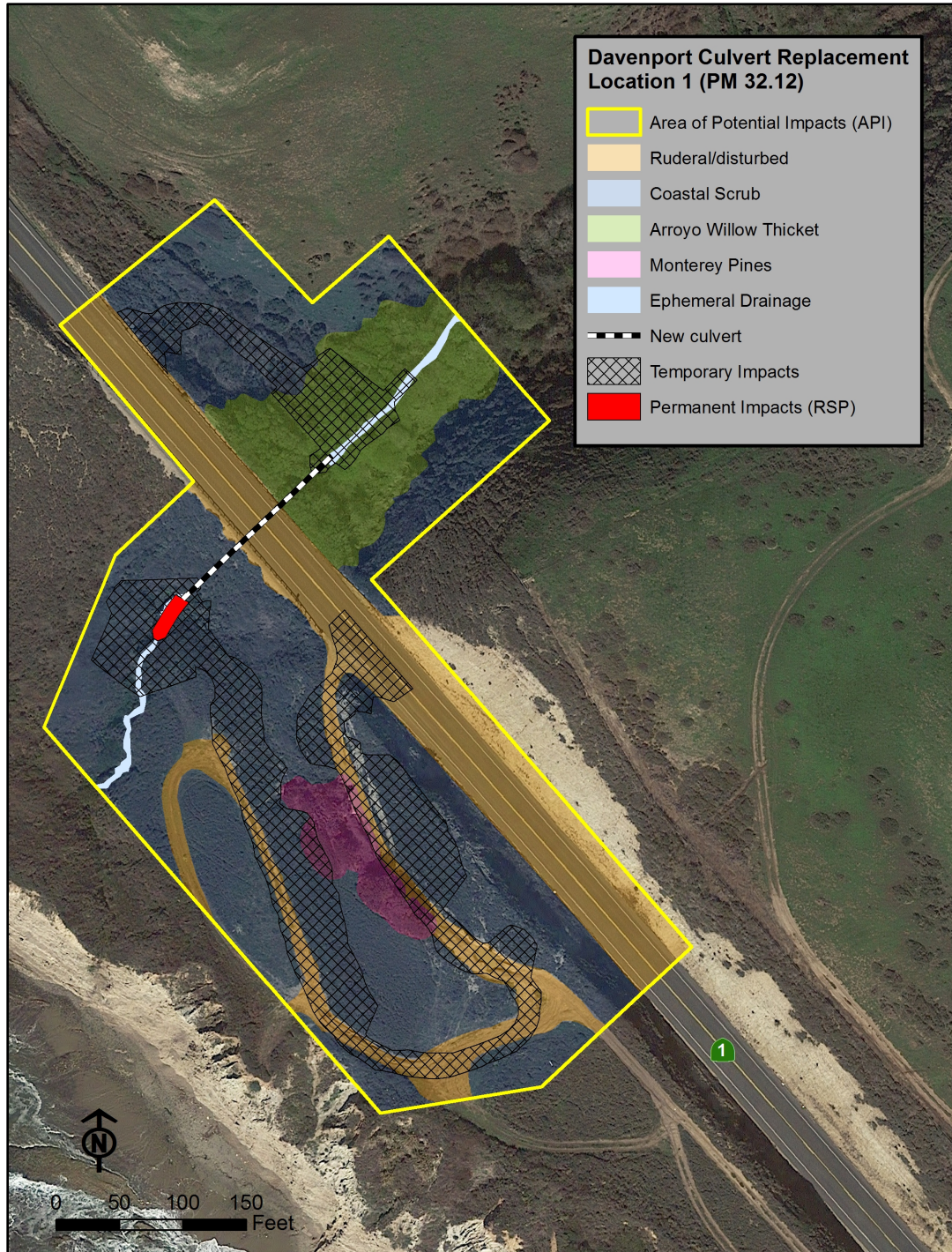


Figure 2-2 Location 1 Area of Potential Impacts and Habitat Map

Location 2 (post mile 33.90)

The area of potential impacts at Location 2 is approximately 2.11 acres (see Figure 2-3). The area of potential impacts is in a coastal, southwest-facing slope, with a moderate slope at and above the culvert inlet side and a steep slope at the culvert outlet side. The culvert drains runoff from the highway and the slope above the culvert. There are defined bed and bank features on both the inlet and outlet sides of the culvert, though no water was visible in or near this culvert during surveys. The slope leading down from the culvert outlet drops about another 50 feet down to the Pacific Ocean.

Vegetation at the inlet side (inland) is densely vegetated with poison oak and other associated scrub vegetation that form a mosaic with riparian habitat. The vegetation can be characterized as Central Coast riparian scrub. Ruderal, weedy species dominate the road shoulders.

Vegetation at the outlet side (coastal) is dominated by coastal scrub habitat best characterized as Central Coast scrub. A variety of annual grasses, flowering plants, and weeds are also interspersed throughout this habitat. Several large clusters of pampas grass (*Cortaderia jubata*) occur on the coastal terrace, south of the culvert outlet.

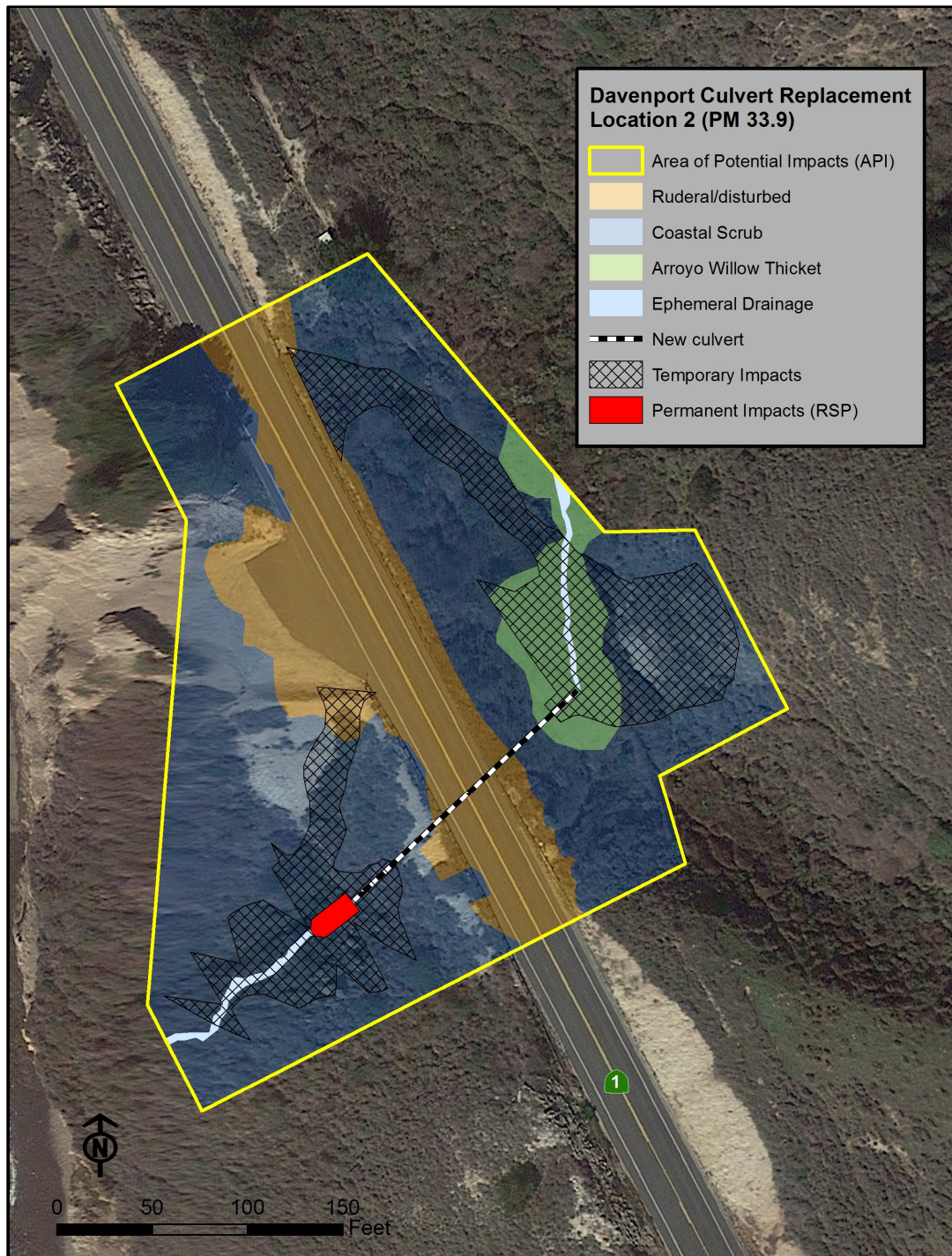


Figure 2-3 Location 2 Area of Potential Impacts and Habitat Map

Location 3 (post mile 34.15)

The area of potential impacts at Location 3 is approximately 3.26 acres (see Figure 2-4). The area of potential impacts is in a coastal, southwest-facing slope, with a moderate slope at and above the culvert inlet and a steep slope at the culvert outlet. The culverts drain runoff from an unnamed drainage channel, the slope above the culvert, and the highway. There are defined bed and bank features above the inlet and below the outlet, but no water was visible in or near this culvert during surveys. The slope leading down from the culvert outlet drops about another 70 feet down to the Pacific Ocean.

Vegetation at the inlet side (inland) is vegetated with a mosaic of ruderal/disturbed species, coastal scrub, and Monterey pine strands. The vegetation can be best characterized as Central Coast riparian scrub. Ruderal weedy species dominate the road shoulders.

Vegetation on the outlet (coastal) side is dominated by coastal scrub habitat best characterized as Central Coast scrub. A variety of annual grasses, flowering plants and weeds are also interspersed throughout this habitat. Several large mats of iceplant (*Carpobrotus edulis*) occur on the coastal terrace, south of the culvert outlet.

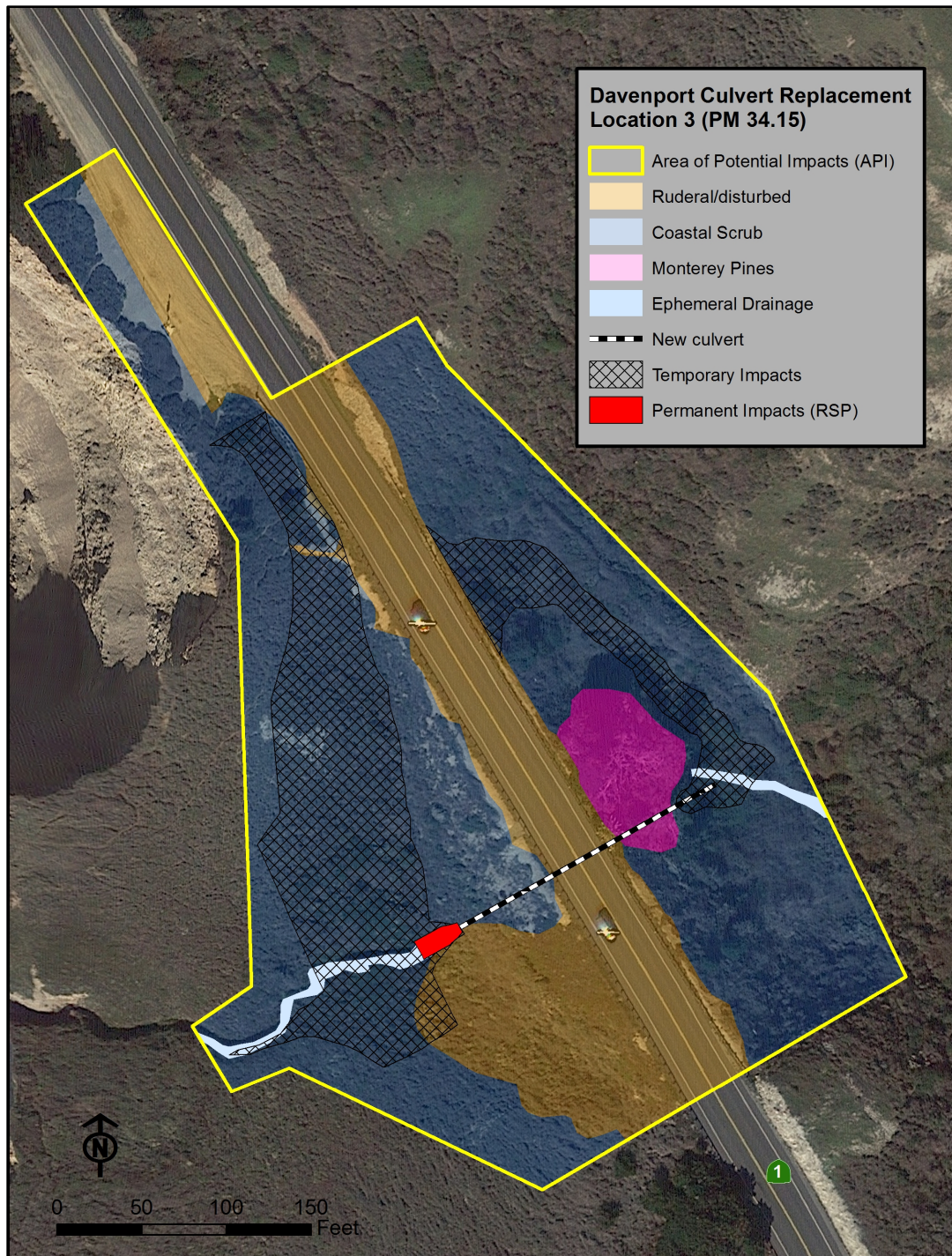


Figure 2-4 Location 3 Area of Potential Impacts and Habitat Map

Location 4 (post mile 35.49)

The area of potential impacts at Location 4 is approximately 2.08 acres (see Figure 2-5). The area of potential impacts is in a coastal southwest-facing slope with a moderate slope above the culvert inlet and a steep slope at the culvert outlet. The culvert conveys water from the Arroyo las Trancas, the slope above the culvert, and runoff from the highway. There are defined bed and bank features at the culvert inlet and culvert outlet. Water was flowing through this culvert during all field surveys in 2018. The slope leading down from the culvert outlet drops about another 80 feet down to the Pacific Ocean.

Vegetation on the inlet (inland) side is vegetated with poison oak and other associated scrub species that form a mosaic with riparian habitat. The vegetation can be best characterized as Central Coast riparian scrub. Ruderal, weedy species dominate the road shoulders.

Vegetation at the outlet (coastal) side is dominated by coastal scrub best characterized as Central Coast scrub. A variety of annual grasses, flowering plants and weeds are also interspersed throughout this habitat. Several large clusters of pampas grass occur on the coastal terrace, south of the culvert outlet.

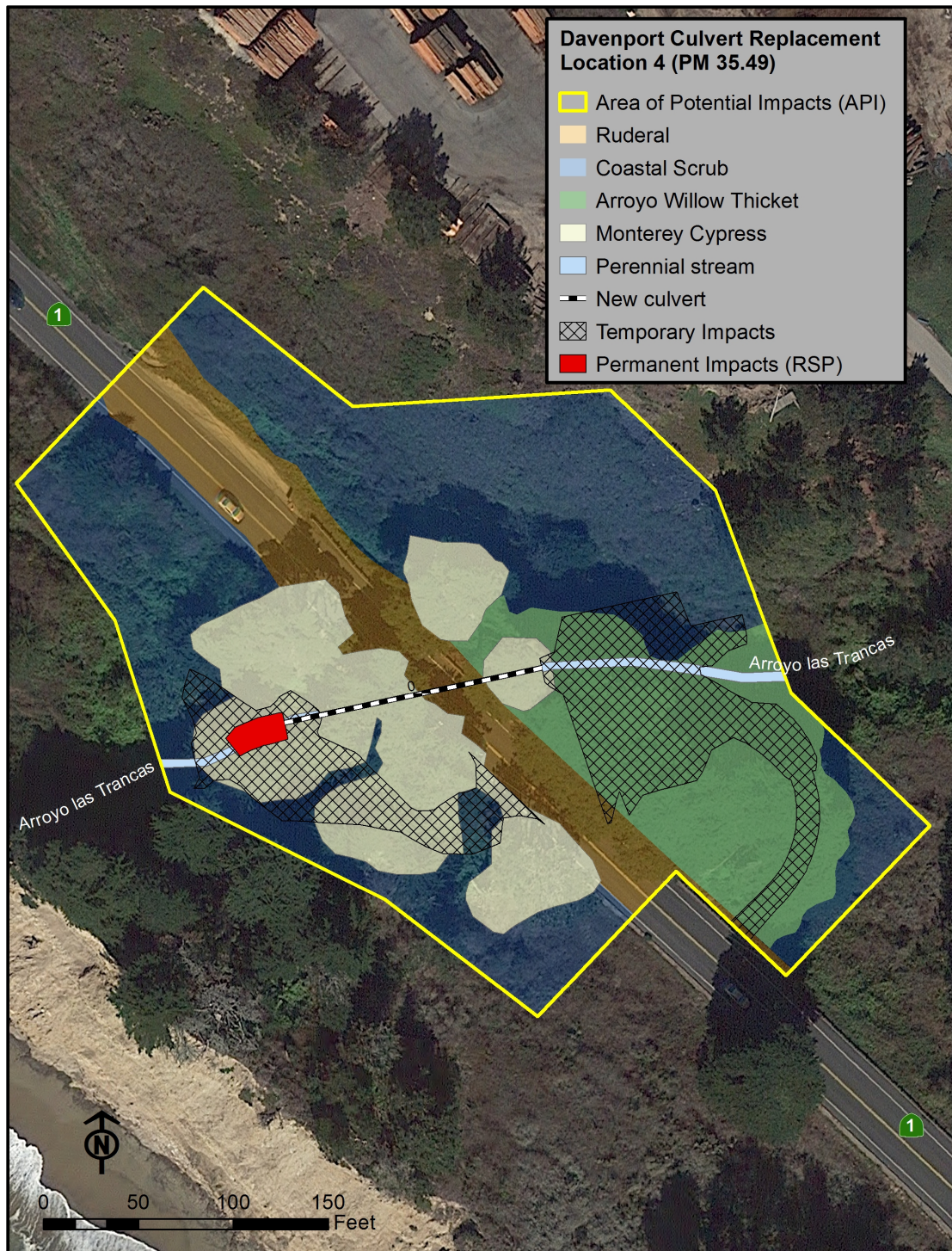


Figure 2-5 Location 4 Area of Potential Impacts and Habitat Map

Environmental Consequences

Impact areas are a subset of the biological study area and represented within the area of potential impacts. These impacts are represented in the area of potential impacts and in habitat maps.

The area of potential impacts includes areas of permanent and temporary impacts and assumes the maximum amount of disturbance/impact associated with construction of the project (including staging areas). Impacts to natural communities/habitats within the project area of potential impacts have been quantified based on ground disturbance.

The total anticipated permanent impacts to natural communities within the biological study area includes:

- 0.02 acre of ruderal/disturbed
- 0.03 acre of coastal scrub
- 0.00 acre of arroyo willow thicket
- 0.01 acre of Monterey cypress stand

Permanent impact consists of tree removal and rock slope protection being placed at culvert outlets. The project will remove up to 20 arroyo willows with a diameter at breast height of 4 inches and up to 8 Monterey cypress (*Cupressus macrocarpa*) with a diameter at breast height of over 6 inches.

The total anticipated temporary impacts to natural communities within the biological study area includes:

- 0.30 acre of ruderal/disturbed
- 2.04 acres of coastal scrub
- 0.35 acre of arroyo willow thicket
- 0.15 acre of Monterey cypress stand

Temporary impacts will consist of staging sites, storage sites, temporary access roads, and the jacking and receiving pits. Sources of temporary impacts will mostly be from the use of various construction equipment and associated worker foot traffic. All construction equipment and materials will be temporarily staged along State Route 1 on previously disturbed areas within the area of potential impacts.

The project will not impact wildlife connectivity or have the potential to result in habitat fragmentation.

A breakdown of permanent and temporary impacts for each culvert location can be found in the Natural Environmental Study.

Avoidance, Minimization, and/or Mitigation Measures

The potential for impacts to natural communities as a result of the project will be reduced and will not result in significant impact under CEQA with the implementation of the following measures:

1. Environmentally sensitive area fencing will be installed in the field along the maximum disturbance limits within the area of potential impacts to minimize disturbance to adjacent habitats and vegetation.
2. Prior to the start of construction activities, environmental sensitive areas will be indicated on project plans and delineated in the field and will be approved by the Caltrans environmental division.
3. All areas temporarily disturbed during construction will be restored to pre-project conditions. Vegetation planting will be conducted on-site and in-kind using native species appropriate for the location.

2.2.2 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 known 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. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high-water mark, in the absence of adjacent wetlands. When adjacent wetlands are present, the Clean Water Act jurisdiction extends beyond the ordinary high-water mark to the limits of the adjacent wetlands.

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 Individual. There are two types of General permits: Regional and Nationwide. 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 Regional or Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (40 Code of Federal Regulations 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency 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 that 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 regarding wetlands. This 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. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated mostly by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the 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. The 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 that may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request.

Affected Environment

Information for this section comes from the Natural Environment Study that was completed for the project in February 2019.

Potential jurisdictional features and riparian habitat were delineated within the biological study area during November 2018.

Full discussion of temporary and permanent impacts to jurisdictional features are discussed in Chapter 4 and is summarized in Table 6 of the of the Natural Environment Study.

Within the Natural Environmental Study, the Regional Water Quality Control Board jurisdictional areas is treated to be equivalent to the U.S. Army Corps of Engineers jurisdiction. Due to the lack of any single coastal wetland parameter outside of the riparian corridor in the biological study area, the area of California Coastal Commission jurisdiction within the biological study area is equivalent to the California Department of Fish and Wildlife jurisdiction.

The potential permanent and temporary impacts to jurisdictional features within the biological study area is depicted on Figures 2-6, 2-7, 2-8 and 2-9 for each culvert location.

The total jurisdictional features mapped within the biological study area are:

- Approximately 0.12 acre of potential U.S. Army Corps of Engineers jurisdictional waters of the U.S. were delineated within the biological study area.
- Approximately 2.52 acres of potential Regional Water Quality Control Board jurisdictional waters of the U.S. and riparian areas were delineated within the biological study area.
- Approximately 2.52 acres of California Department of Fish and Wildlife jurisdictional areas along the riparian corridors were delineated within the biological study area.

- Approximately 2.52 acres of California Coastal Commission jurisdictional areas along the riparian corridors were delineated within the biological study area. Approximately 2.40 acres met the criteria for riparian Environmentally Sensitive Habitat Areas and approximately 0.12 acre met the criteria for coastal stream Environmentally Sensitive Habitat Areas.

No single-parameter coastal wetlands or three-parameter federal wetlands were mapped in the biological study area.

Environmental Consequences

The project will impact 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 jurisdictional areas within the area of potential impacts.

Full discussion of the project's temporary and permanent impacts to jurisdictional features for each culvert locations are discussed in Chapter 4 and is summarized in Table 7 of the of the Natural Environment Study.

The project will result in permanent impacts to jurisdictional areas within the biological study area due to the installation of rock slope protection at the culvert outlets.

Culvert Location #1 (PM 32.12)

- Approximately 0.0045 acre of U.S. Army Corps of Engineers/Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be permanently impacted.

Culvert Location #2 (PM 33.90)

- Approximately 0.0025 acre of U.S. Army Corps of Engineers/Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be permanently impacted.

Culvert Location #3 (PM 34.15)

- Approximately 0.0013 acre of U.S. Army Corps of Engineers/Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be permanently impacted.

Culvert Location #4 (PM35.49)

- Approximately 0.0025 acre of U.S. Army Corps of Engineers/Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be permanently impacted.

The total permanent impact to jurisdictional areas is approximately 0.011 acre of U.S. Army Corps of Engineers/Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas.

The project will permanently impact approximately 0.011 acre of California Coastal Commission jurisdictional areas that meets the criteria for coastal stream Environmentally Sensitive Habitat Areas. The project is not anticipated to result in permanent impact to any area that would meet the California Coastal Commission criteria for riparian Environmentally Sensitive Habitat Areas.

The project will result in temporary impacts to jurisdictional areas within the biological study area due to temporary construction access, temporary storage areas, cut/fill, and the jacking/receiving pits required to replace the culverts.

Culvert Location #1 (PM 32.12)

- Approximately 0.041 acre of U.S. Army Corps of Engineers jurisdictional area will be temporarily impacted.
- Approximately 0.17 acre of Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be temporarily impacted.

Culvert Location #2 (PM 33.90)

- Approximately 0.016 acre of U.S. Army Corps of Engineers jurisdictional area will be temporarily impacted.
- Approximately 0.26 acre of Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be temporarily impacted.

Culvert Location #3 (PM 34.15)

- Approximately 0.018 acre of U.S. Army Corps of Engineers jurisdictional area will be temporarily impacted.
- Approximately 0.20 acre of Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be temporarily impacted.

Culvert Location #4 (PM35.49)

- Approximately 0.015 acre of U.S. Army Corps of Engineers jurisdictional area will be temporarily impacted.
- Approximately 0.34 acre of Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas will be temporarily impacted.

Total temporary impact to jurisdictional areas is approximately 0.090 acre of U.S. Army Corps of Engineers jurisdictional area and approximately 0.98 acre of Regional Water Quality Control Board, California Department of Fish and Wildlife and California Coastal Commission jurisdictional areas.

The project will impact approximately 0.090 acre of California Coastal Commission jurisdictional area that meets the criteria for coastal stream Environmentally Sensitive Habitat Areas. The project will also impact approximately 0.89 acre of California Coastal Commission jurisdictional area that meets the criteria for riparian Environmentally Sensitive Habitat Areas. The project is anticipated to remain consistent with applicable coastal policies discussed in Section 2.1.1. Land Use – Coastal Zone.

It is anticipated that project will require the following permits:

- Section 404 Nationwide Permit from U.S. Army Corps of Engineers for impacts to Water of the U.S.
- Section 401 Certification from the Regional Water Quality Control Board for impacts to Waters of the U.S.
- Section 1602 Streambed Alteration Agreement from California Department of Fish and Wildlife for impacts to streams.
- Coastal Development Permit from California Coastal Commission for impacts to Environmentally Sensitive Habitat Areas.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce the potential impacts to less than significant under CEQA for impacts to jurisdictional areas resulting from the project:

1. Prior to any ground-disturbing activities, environmentally sensitive area fencing will be installed around jurisdictional waters, coastal zone Environmentally Sensitive Habitat Areas, and the dripline of trees to be protected within the project limits. Caltrans-defined environmentally sensitive areas will be noted on design plans and delineated in the field prior to the start of construction activities.
2. Any necessary temporary stream diversion will be timed to occur between June 1 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Deviations from this work window will only be made with permission from the relevant regulatory agencies.
3. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.

4. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional other waters and riparian habitat. At a minimum, erosion controls will be maintained on a daily basis throughout the construction period.
5. During construction, the staging areas will conform to Best Management Practices applicable to attaining zero discharge of storm water runoff. At a minimum, all equipment and vehicles will be checked and maintained by the contractor on a daily basis to ensure proper operation and avoid potential leaks or spills.
6. Stream contours will be restored as close as possible to their original condition.
7. All permit terms and conditions will be incorporated into the project plans and specifications and will be implemented as required.

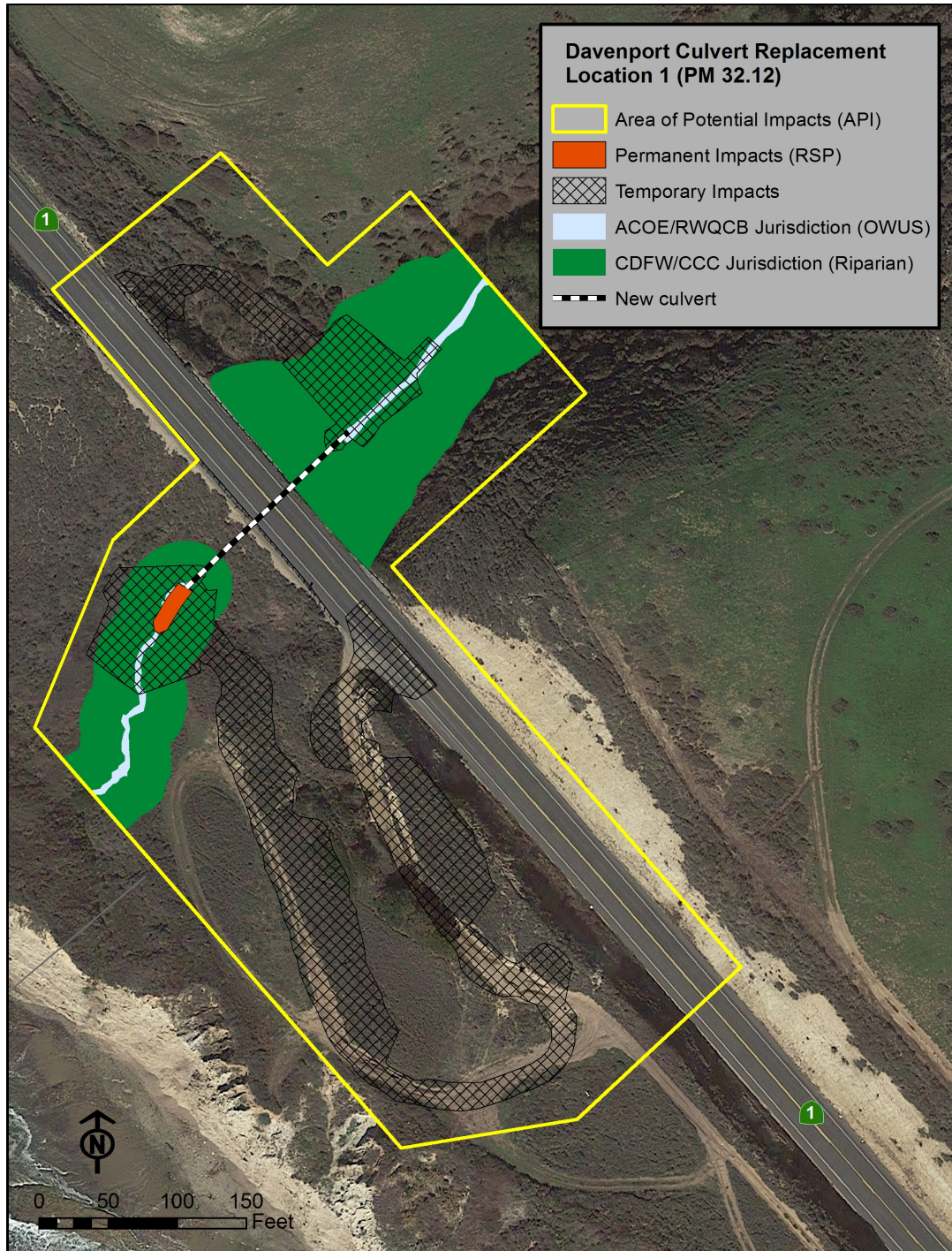


Figure 2-6 Location 1 Potential Impacts to Jurisdictional Areas

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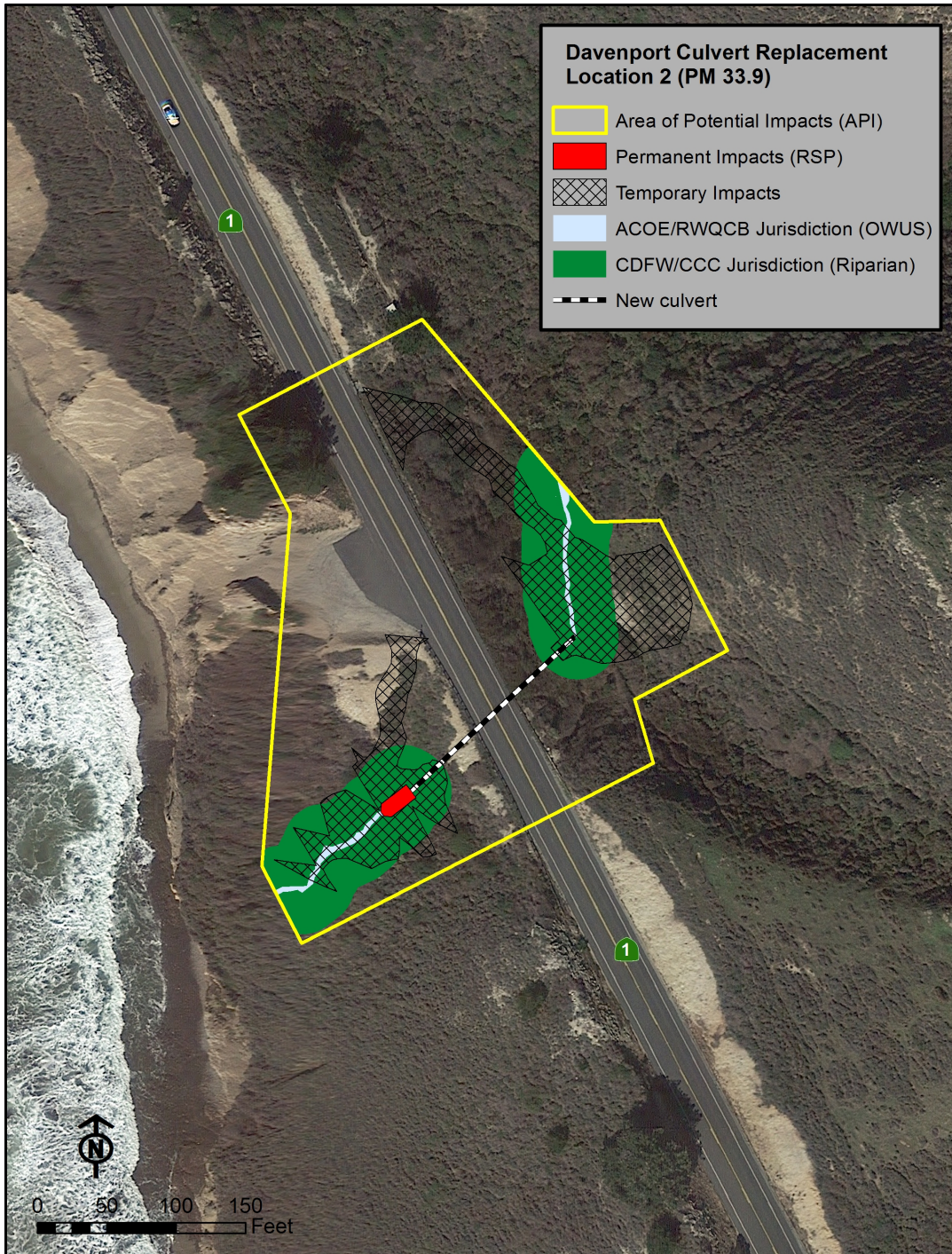


Figure 2-7 Location 2 Potential Impacts to Jurisdictional Areas

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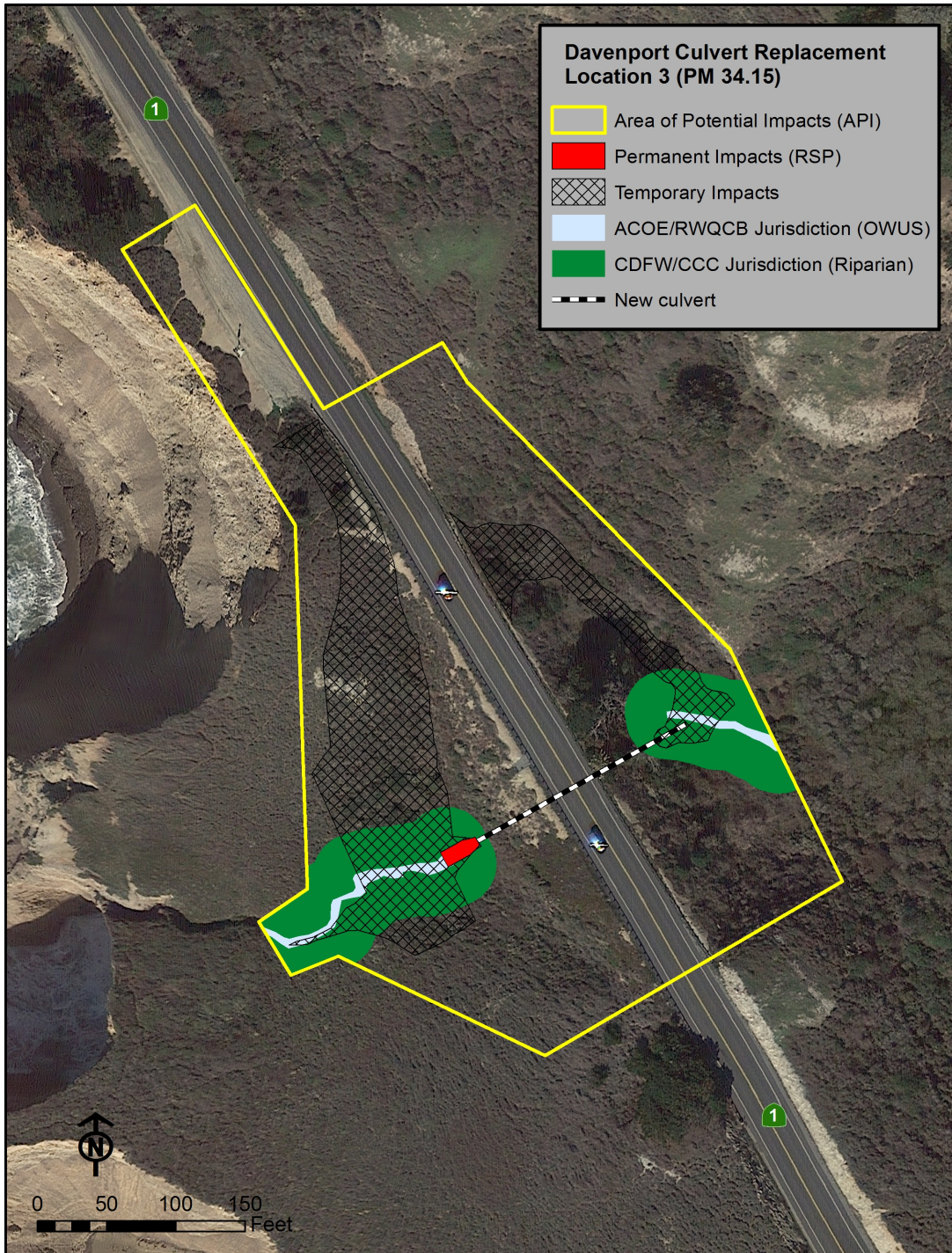


Figure 2-8 Location 3 Potential Impacts to Jurisdictional Areas

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Figure 2-9 Location 4 Potential Impacts to Jurisdictional Areas

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2.2.3 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). See Section 2.2.5, Threatened and Endangered Species, in this document for detailed information about these species.

This section of the document discusses all 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 rare and endangered plants.

The regulatory requirements for the Federal Endangered Species Act can be found at 16 U.S. Code 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. Caltrans 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 (CEQA), found at California Public Resources Code, Sections 21000-21177.

Affected Environment

Information in this section comes from the Natural Environment Study prepared for this project in February 2019.

A full discussion of state and federal species found in the region is available in Chapter 3 and is summarized in Table 3 of the Natural Environment Study. Official species list and updates for the project area were received from California Department of Fish and Wildlife, U.S. Fish and Wildlife Service and the National Marine Fisheries Service, which is included in the Natural Environmental Study.

Botanical surveys were conducted within the biological study area during 2018 on March 26, April 16, May 31, July 16, August 20, and October 10.

Twenty-three special-status plant species have the potential to occur within the region of the project:

- Santa Cruz cypress (*Cupressus abramsiana*)
- Blasdale's bent grass (*Agrostis blasdalei*)
- Bent-flowered fiddleneck (*Amsinckia lunaris*)
- Anderson's manzanita (*Arctostaphylos andersonii*)
- Ohlone manzanita (*Arctostaphylos ohloneana*)
- Marsh sandwort (*Arenaria paludicola*)
- Scotts Valley Spineflower (*Chorizanthe robusta* var. *hartwegii*)
- Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*)
- San Francisco collinsia (*Collinsia multicolor*)
- sand-loving wallflower (*Erysimum ammophilum*)
- Menzies' wallflower (*Erysimum menziesii*)
- Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*)
- Point Reyes horkelia (*Horkelia marinensis*)
- Marsh microseris (*Microseris paludosa*)
- White-rayed pentachaeta (*Pentachaeta bellidiflora*)
- San Francisco popcorn-flower (*Plagiobothrys diffuses*)
- Monterey pine (*Pinus radiata*)
- Choris' popcornflower (*Plagiobothrys chorisianus* var. *chorisianus*)
- Scotts Valley polygonum (*Polygonum hickmanii*)
- Pine rose (*Rosa pinetorum*)
- San Francisco champion (*Silene verecunda* ssp. *verecunda*)
- Santa Cruz microseris (*Stebbinsoseris decipiens*)
- Santa Cruz clover (*trifolium buckwestiorum*)

Because of their threatened and/or endangered status, the following plant species are discussed in Section 2.2.5, Threatened and Endangered Species: Santa Cruz cypress, marsh sandwort, Scotts Valley spineflower, Ben Lomond spineflower, Menzies' wallflower, white-rayed pentachaeta, and Scotts Valley polygonum.

There is suitable habitat present within the biological study area for ten out of the twenty-three plant species known to occur in the region: Ben Lomond spineflower, San Francisco collinsia, sand-loving wallflower, Kellogg's horkelia, Point Reyes horkelia, Monterey pine, Choris' popcornflower, San Francisco champion, Santa Cruz microseris, and Santa Cruz clover.

Although suitable habitats are present for these ten plant species, the habitats are marginal within the biological study area.

Environmental Consequences

No special-status plant species were observed during the appropriately timed surveys at each culvert location within the biological study area.

No special-status plant species are expected to occur within the biological study area or otherwise be impacted as a result of the project.

As a result, the project is not anticipated to impact any special-status plants.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization or mitigation measures are required for plant species of concern.

2.2.4 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 2.2.5, Threatened and Endangered Species. All other special-status animal species are discussed here, including California Department of Fish and Wildlife 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

Information in this section comes from the Natural Environment Study prepared for this project in February 2019.

A full discussion of state and federal species found in the region is available in Chapter 3 and is summarized in Table 3 of the Natural Environment Study. Official species list and updates for the project area were received from California Department of Fish and Wildlife, U.S. Fish and Wildlife Service and the National Marine Fisheries Service, which is included in the Natural Environmental Study.

This section discusses the special-status animal species that could be present in the project area or that could be impacted by the project.

Twenty special-status animal species have the potential to occur within the region of the project:

- Zayante Band-winged grasshopper (*Trimerotropis infantilis*)
- Tidewater goby (*Eucyclogobius newberryi*)
- Central California coast steelhead DPS (*Oncorhynchus mykiss irideus* [pop. 8])
- Coho salmon - central California coast evolutionarily significant unit (ESU) (*Oncorhynchus kisutch* pop. 4)
- California tiger salamander (*Ambystoma californiense*)
- Foothill yellow-legged frog (*Rana boylei*)
- California red-legged frog (*Rana draytonii*)
- Western pond turtle (*Emys marmorata*)
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)
- Tricolored blackbird (*Agelaius tricolor*)
- Burrowing owl (*Athene cunicularia*)
- California black rail (*Laterallus jamaicensis contorniculus*)
- Marbled murrelet (*Brachyramphus marmoratus*)
- Western snowy plover (*Charadrius alexandrinus nivosus*)
- Black swift (*Cypseloides niger*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)
- California least tern (*Sternula antillarum browni*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Southern Sea Otter (*Enhydra lutris nereis*)

Because of their threatened and/or endangered status, the following animal species are discussed in Section 2.2.5, Threatened and Endangered Species: Zayante Band-winged grasshopper, tidewater goby, central California coast steelhead DPS, coho salmon—Central California Coast ESU, California tiger salamander, California red-legged frog, San Francisco garter snake, Marbled murrelet, western snowy plover, southwestern willow flycatcher, California least tern, least Bell's Vireo, and Southern sea otter.

Nesting Bird Species

All native birds are protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503. Nesting bird species are addressed here as a group because they have similar habitat requirements, project-related impacts, and avoidance and minimization measures. There are no formal survey protocols for most of these bird species.

Common birds observed within the biological study area included species such as the western scrub jay (*Aphelocoma californica*), California gull (*Larus californicus*), California towhee (*Melospiza crissalis*), bushtit (*Psaltirparus minimus*), Bewick's wren (*Thryomanes bewickii*), mourning dove (*Zenaidura macroura*), black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*).

No active nests were observed, but potential nesting habitat for bird species occurs throughout the trees and shrubs in the biological study area.

Environmental Consequences

Within the biological study area, no special-status animal species habitats were present at any of the culvert locations and no special-status animal species were observed during appropriately timed surveys.

Of the twenty special status animal species, the following nineteen were not observed, do not have the potential to be present within the project area and will not be impacted by the project: Zayante Band-winged grasshopper, tidewater goby, central California coast steelhead DPS, coho salmon - central California coast ESU, California tiger salamander, foothill yellow-legged frog, western pond turtle, San Francisco garter snake, tricolored blackbird, burrowing owl, California black rail, marbled murrelet, western snowy plover, black swift, southwestern willow flycatcher, saltmarsh common yellowthroat, California least tern, least Bell's vireo, and Southern Sea Otter.

California red-legged frog was not observed but have the potential to be present within the project area.

Nesting Bird Species

Nesting birds within 500 feet of the culvert locations may be disturbed by construction activities associated with the project. The removal of vegetation

could directly impact active bird nests and any eggs or young residing in a nest. Indirect impacts could also result from noise and disturbance associated with construction, which could alter perching, foraging and nesting behaviors. While temporary loss of vegetation supporting potential nesting habitat would occur, there will be mitigation through habitat restoration. The implementation of avoidance and minimization measures will reduce the potential for adverse effects to nesting bird species.

California Department of Fish and Wildlife typically requires pre-construction nesting bird surveys and avoidance of impacts to active bird nests.

Avoidance, Minimization, and/or Mitigation Measures

The potential for impacts to animal species are a result of the project will be reduced and will result in less than significant impacts under CEQA with the implementation of the following measures:

Nesting Bird Species

The following measures apply to all birds protected by the Migratory Bird Treaty Act and California Fish and Game Code to reduce project impacts to less than significant.

1. Prior to construction, vegetation removal will be scheduled to occur from September 2 to February 14, outside of the typical nesting bird season if possible, 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 will be conducted by a biologist determined qualified by Caltrans no more than three days prior to construction. If an active nest is found, Caltrans will 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 will be avoided until a qualified biologist has determined that juveniles have fledged.
2. During construction, active bird nests will not be disturbed and eggs or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code will not be killed, destroyed, injured, or harassed at any time. Readily visible exclusion zones where nests must be avoided within 100 feet of disturbance will be established by a qualified biologist using environmentally sensitive area fencing. Work in exclusion zones will be avoided until young birds have fledged (permanently left the nest) or the qualified biologist has determined that nesting activity has otherwise ceased.

3. Trees to be removed will be noted on design plans. Prior to any ground-disturbing activities, environmentally sensitive area fencing will be installed around the dripline of trees to be protected within the project limits.
4. All clearing/grubbing and vegetation removal will be monitored and documented by the biological monitor(s) regardless of time of year.

2.2.5 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 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 (and Caltrans, as assigned), 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 or a Letter of Concurrence. 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 (CESA), California Fish and Game Code Section 2050, et seq. The California Endangered Species Act 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 2080 of the California 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 California 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 California Endangered Species Act requiring a Biological Opinion under Section 7 of Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to 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

This section is based on information in the Natural Environment Study prepared for the project in February 2019.

A full discussion of threatened and endangered species found in the region is available in the Natural Environment Study.

Official species list and updates for the project area were received from California Department of Fish and Wildlife, U.S. Fish and Wildlife Service and the National Marine Fisheries Service, which is included in the Natural Environmental Study.

An official U.S. Fish and Wildlife species list for the project was received through the U.S. Fish and Wildlife IPaC website (IPAC 2018) on January 20, 2016 and most recently updated on June 14, 2019.

There is no Essential Fish Habitat for federally managed species at each project location and Essential Fish Habitat consultation with National Marine Fisheries Service will not be required.

Due to lack of suitable habitat and/or no observation during appropriately timed surveys, the project will not affect any state listed species and California Endangered Species Act consultation is not required.

Summary of all agency coordination conducted for this project is presented in Chapter 4, Comments and Coordination.

During reconnaissance surveys of the biological study area, the following twenty threatened or endangered species were not found:

- Santa Cruz cypress (*Cupressus abramsiana*)
- Marsh sandwort (*Arenaria paludicola*)
- Scotts Valley spineflower (*Chorizanthe robusta* var. *Hartwegii*)
- Ben Lomond spineflower (*Chorizanthe pungens* var. *Hartwegiana*)
- Menzies' wallflower (*Erysimum menziesii*)
- White-rayed pentachaeta (*Pentachaeta bellidiflora*)
- Scotts Valley polygonum (*Polygonum hickmanii*)
- Zayante band-winged grasshopper (*Trimerotropis infantilis*)
- Tidewater goby (*Eucyclogobius newberryi*)
- Central California Coast steelhead distinct population segment (DPS) (*Oncorhynchus mykiss irideus* [pop. 8])
- Coho salmon – Central California Coast ESU (*Oncorhynchus kisutch* [pop. 4])
- California tiger salamander (*Ambystoma californiense*)
- California red-legged frog (*Rana draytonii*)
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)
- Marbled murrelet (*Brachyramphus marmoratus*)
- Western snowy plover (*Charadrius alexandrinus nivosus*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- California least tern (*Sternula antillarum browni*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Southern sea otter (*Enhydra lutris*)

Field studies determined that none of the culvert locations provides feasible fish passage. Culverts locations 1, 2 and 3 are on unnamed drainage locations that are too small and the slopes are too steep to support anadromous fish or fish passage. Culvert location 4 is on the Arroyo las Trancas drainage that leads directly to the Pacific Ocean. This drainage was also found to be too small and the slope too steep to support anadromous fish or fish passage. The primary factor is that these culverts drainages end at or near the edge of coastal bluffs with extreme drop offs in to the coast line. The coastal bluffs are a natural barrier for fish trying to enter the drainages at each culvert location.

Field studies determined that there is no potential suitable habitat for nineteen of the twenty threatened or endangered species within the biological study area.

Of the twenty threatened and endangered species known to exist in the region, only one has the potential for presence in the biological study area and/or to be impacted by the project: California Red-legged frog.

California Red-Legged Frog

The California red-legged frog (*Rana draytonii*) is a federally threatened species and California species of special concern. This 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 frog populations in California.

All of the culvert replacement locations occur within federally designated California red-legged frog Critical Habitat Unit Santa Cruz County 1 (known as SCZ-1). This critical habitat unit is composed of approximately 72,249 acres along the coastline of northern Santa Cruz County, plus a small area in southern San Mateo County, from approximately Green Oaks Creek to Wilder Creek. The critical habitat unit is essential for the conservation of the California red-legged frog because it connects occupied sites along the coast to those farther inland. Permanent and seasonal aquatic habitat for breeding, along with upland and dispersal habitat, can be found in SCZ-1, which is currently occupied by California red-legged frogs.

The project area of potential impacts at all four culvert locations lies entirely within the critical habitat unit SCZ-1 for the California red-legged frog, and the presence of this species is inferred in the area of potential impacts, where suitable upland habitat exists.

No protocol surveys were conducted for the California red-legged frog, and the species was not observed during reconnaissance surveys. Known occurrence records for the California red-legged frog have found the species within 1 mile of the biological study area (CNDDB 2018), and presence of the species in the biological study area is inferred.

Environmental Consequences

Due to lack of suitable habitat and/or no observation during appropriately timed surveys, the Federal Endangered Species Act Section 7 effects determination is that the project will have no effect on the following threatened or endangered species: Santa Cruz cypress, marsh sandwort, Scotts Valley spineflower, Ben Lomond spine flower, Menzies wallflower, white-rayed pentachaeta, San Francisco popcorn-flower, Scotts Valley polygonum, Zayante band-winged grasshopper, tidewater goby, Central California Coast steelhead DPS, coho salmon – Central California Coast ESU, California tiger salamander, San Francisco garter snake, marbled murrelet, western snowy

plover, southwestern willow flycatcher, California least tern, least Bell's vireo, and southern sea otter. No formal consultation pursuant to the Federal Endangered Species Act Section 7 effects determination were conducted for these species.

California Red-Legged Frog

Based on the anticipated disturbance footprint of the area of potential impacts for all four locations, the project will result in permanent and temporary impacts to California red-legged frog critical habitat:

- Approximately 0.04 acre of California red-legged frog critical habitat will be permanently impacted.
- Approximately 2.86 acres of California red-legged frog critical habitat will be temporarily impacted.

Of the 72,249 acres within California red-legged frog critical habitat unit SCZ-1, the 2.90 acres of total impacts associated with the project equate to approximately 0.004% of the critical habitat unit.

Project construction could result in injury or death of California red-legged frogs that may be present within the project site. Injury or death could occur accidentally as a result of worker foot traffic or operation of construction equipment. Erosion and sedimentation during construction could also occur, which could directly or indirectly affect California red-legged frog habitat quality. The potential for these impacts are anticipated to be low due to the lack of observation of California red-legged frogs within the biological study area during surveys, but this could change through time, where species could potentially expand populations and enter the biological study area.

The Federal Endangered Species Act Section 7 effects determination is that the project may affect, and is likely to adversely affect, the California red-legged frog and its critical habitat. The basis for this determination is that the California red-legged frog has been inferred in the upland and aquatic habitat within the biological study area, there could be potential for take of the species during construction, and the entire project footprint lies within critical habitat unit SCZ-1 for the California red-legged frog.

The project has obtained concurrence from U.S. Fish and Wildlife Service for the use of a Programmatic Biological Opinion for California red-legged frog on September 11th, 2019.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization or mitigation measures are anticipated for the following species: Santa Cruz cypress, marsh sandwort, Scotts Valley spineflower, Ben Lomond spine flower, Menzies wallflower, white-rayed pentachaeta, San Francisco popcorn-flower, Scotts Valley polygonum, Zayante band-winged grasshopper, tidewater goby, Central California Coast

steelhead DPS, coho salmon – Central California Coast ESU, California tiger salamander, San Francisco garter snake, marbled murrelet, western snowy plover, southwestern willow flycatcher, California least tern, least Bell's vireo, and southern sea otter.

The following measures will be implemented to reduce the potential impacts to California red-legged frog and its associated habitat to less than significant under CEQA:

California Red-Legged Frog

The project may affect and is likely to adversely affect California red-legged frog, and California red-legged frog critical habitat within the project limits. The following avoidance, minimization and/or mitigation measures will be implemented to reduce the potential for adverse effects to California red-legged frog and their associated habitat.

The following measures includes measures from the Programmatic Biological Opinion that will be implemented for this project:

1. Only U.S. Fish and Wildlife Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
2. Ground disturbance will 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 will survey the project area no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work begins. The U.S. Fish and Wildlife Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The relocation site will be in the same drainage to the extent practicable. Caltrans will 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 will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be

used in the training sessions, provided that a qualified person is on hand to answer any questions.

5. A U.S. Fish and Wildlife Service-approved biologist will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, Caltrans will designate a person to monitor on-site compliance with all minimization measures. The U.S. Fish and Wildlife Service-approved biologist will ensure that 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 will notify the Resident Engineer immediately. The Resident Engineer will 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 will be notified as soon as possible.
6. During project activities, all trash that may attract predators or scavengers will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
7. Without the express permission of U.S. Fish and Wildlife Service, all refueling, maintenance and staging of equipment and vehicles will occur at least 60 feet from the riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of the habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
8. Habitat contours will be returned to a natural configuration at the end of the project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Caltrans determined 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 will be limited to the minimum necessary to achieve the project. Environmentally sensitive areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and

construction areas outside of wetlands and riparian areas to the maximum extent practicable.

10. Caltrans will attempt to schedule work for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum 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 will be used to assist in scheduling work activities to avoid sensitive habitats during key times of the year.
11. To control sedimentation during and after project completion, Caltrans will implement Best Management Practices 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 will 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 will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.
13. Unless approved by the U.S. Fish and Wildlife Service, water will not be impounded in a manner that may attract California red-legged frogs.
14. A U.S. Fish and Wildlife Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkia*), and centrarchid fishes from the project area, to the maximum extent possible. The U.S. Fish and Wildlife Service-approved biologist will 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 will be followed at all times.
17. Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless U.S. Fish and Wildlife Service and Caltrans determined that it is not feasible or practical.
18. Caltrans will 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, Caltrans will implement the following additional protective measures for the California red-legged frog:
 - a. Caltrans will not use herbicides during the breeding season for the California red-legged frog.
 - b. Caltrans will conduct surveys for the California red-legged frog immediately prior to the start of herbicide use. If found, California red-legged frogs will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur.
 - c. Giant reed and other invasive plants will be cut and hauled out by hand and painted with glyphosate-based products, such as Aquamaster® or Rodeo®.
 - d. Licensed and experienced Caltrans staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site.
 - e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.
 - f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water).
 - g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 miles per hour.
 - h. No herbicides will be applied within 24 hours of forecasted rain.
 - i. Application of all herbicides will be done by qualified Caltrans staff or contractors to ensure that overspray is minimized, and that all applications are made in accordance with the label recommendations and with implementation of all required and reasonable safety measures. A safe dye will be added to the

mixture to visually denote treated sites. Application of herbicides will 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 will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Prior to the onset of work, Caltrans will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

2.2.6 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

This section is based on information in the Natural Environment Study prepared for the project in February 2019.

A full discussion of invasive species found in the region is available in the Natural Environment Study, along with a detailed list.

A total of 42 invasive plant species identified by the online California Invasive Plant Council (Cal-IPC) Database (2018) were observed within the biological study area:

- sticky snakeroot (*Ageratina adenophora*)
- slender wild oat (*Avena barbata*)
- common wild oat (*Avena fatua*)
- black mustard (*Brassica nigra*)
- big quaking grass (*Briza mazima*)

- ripgut brome (*Bromus diandrus*)
- soft chess brome (*Bromus hordeaceus*)
- red brome (*Bromus madritensis ssp. rubens*)
- downy brome (*Bromus tectorum*)
- Italian thistle (*Carduus pycnocephalus*)
- sea fig (*Carpobrotus edulis*)
- tocalote (*Centaurea melitensis*)
- yellow star-thistle (*Centaurea solstitialis*)
- bull thistle (*Cirsium vulgare*)
- poison hemlock (*Conium maculatum*)
- pampas grass (*Cortaderia jubata*)
- redstem filaree (*Erodium cicutarium*)
- blue gum (*Eucalyptus globulus*)
- carnation weed (*Euphorbia terracina*)
- rattail fescue (*Festuca myuros*)
- Italian ryegrass (*Festuca perennis*)
- fennel (*Foeniculum vulgare*)
- French broom (*Genista monspessulana*)
- cutleaf geranium (*Geranium dissectum*)
- bristly oxtongue (*Helminthotheca echioides*)
- summer mustard (*Hirschfeldia incana*)
- foxtail barley (*Hordeum murinum*)
- smooth cat's ear (*Hypochaeris glabra*)
- sweet alyssum (*Lobularia maritima*)
- hyssop loosestrife (*Lythrum hyssopifolium*)
- Bermuda buttercup (*Oxalis pes-caprae*)
- burclover (*Medicago polymorpha*)
- kikuyu grass (*Pennisetum clandestinum*)
- Harding grass (*Phalaris aquatica*)
- smilo grass (*Piptatherum miliaceum*)
- English plantain (*Plantago lanceolata*)
- rabbitsfoot grass (*Polypogon monspeliensis*)
- wild radish (*Raphanus sativus*)

- sheep sorrel (*Rumex acetosella*)
- curly dock (*Rumex crispus*)
- milk thistle (*Silybum marianum*)
- rose clover (*Trifolium hirtum*)

Seven exotic plant species with an invasiveness rating of “High” were observed in the biological study area: downy brome, red brome, yellow star-thistle, sea fig, pampas grass, fennel, and French broom.

A total of 18 plant species were observed within the biological study area with an invasiveness rating of “Moderate”: sticky snakeroot, slender wild oat, common wild oat, black mustard, riggut brome, Italian thistle, tocalote, bull thistle, poison hemlock, blue gum, carnation weed, rattail ryegrass, cutleaf geranium, summer mustard, foxtail barley, Bermuda buttercup, Harding grass and rose clover.

and 16 plant species were observed within the biological study area with an invasiveness rating of “Limited”: big quaking grass, soft chess brome, redstem filaree, bristly oxtongue, smooth cat’s ear, sweet alyssum, hyssop loosestrife, burclover, kikuyu grass, smilo grass, English plantain, rabbitsfoot grass, wild radish, sheep sorrel, curly dock, milk thistle,

Most invasive plant species are sparsely scattered throughout the biological study area and concentrated in ruderal/disturbed areas along the edges of State Route 1.

Environmental Consequences

Ground disturbance and other aspects of the project construction (erosion control, import fill, landscaping, etc.) could potentially spread or introduce invasive species within the biological study area.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as invasive. None of the species on the California list of invasive species is used by Caltrans for erosion control or landscaping. All equipment and materials will be inspected for the presence of invasive species and cleaned if necessary. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce the potential impacts of invasive species on the project to less than significant under CEQA:

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 will be imported. When practicable, invasive exotic plants in the project site will be removed and properly disposed of. All invasive vegetation removed from the construction site will be taken to a 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 will be disposed of at a 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 will be avoided.
3. Construction equipment will be certified as “weed-free” by Caltrans before entering the construction site. If necessary, wash stations on-site will be established for construction equipment under the guidance of Caltrans to avoid/minimize the spread of invasive plants and/or seeds within the construction area.

2.3 Construction Impacts

The project will replace culverts that cross beneath the roadway at four spots along State Route 1. The anticipated construction period for the project is 2020/2021. Construction will take approximately 120 working days, with work done one culvert at a time. The new culverts will be installed in the same location as the existing culvert. At the end of construction, the existing culverts at post miles 32.12, 3.90 and 34.15 will be filled with concrete and then abandoned in place. The existing culvert at post mile 35.49 will be removed as part of the construction process. Construction staging, and equipment storage will sit within the existing state right-of-way, using existing turnouts or previously disturbed areas where possible.

Temporary easements will be necessary for project construction. Temporary construction access is required to access the inlet and outlet of each culvert. Temporary jacking and receiving pits are required to install the new culvert pipes. The creation of temporary access and installation pits will require earthwork, excavation, grading, and vegetation removal, and may require tree removal. At the end of construction, all temporary construction-related disturbance will be removed, each site will be re-graded to mimic surrounding landscape, and each site will be revegetated with plants appropriate for the region.

When construction activities are near sensitive environmental resources, environmentally sensitive area fencing will be installed to protect resources from potential impacts as a result of construction activities. Any environmentally sensitive areas will also be delineated in the field and be

approved by the project environmental division prior to the beginning of any construction activities, including equipment or materials storage.

Affected Environment

Traffic and Transportation/Pedestrian and Bicycle Facilities

Within the project limits, State Route 1 is a two-lane highway on rolling terrain and runs parallel to the California coast. The highway consists of two 12-foot travel lanes with approximately 4-foot outside shoulders.

Water Quality and Storm Water Runoff

The project lies within the Central Coast Regional Water Quality Control Board jurisdiction. Design and construction of the project must adhere to the requirements set forth in the Caltrans National Pollutant Discharge Elimination System (NPDES) permit, the Caltrans Storm Water Management Plan (SWMP), the Caltrans Project Planning and Design Guide, the Construction Site Best Management Practices Manual and Caltrans Standard Specifications.

Air Quality

The project is in a rural area, within the North Central Coast Air Basin (NCCAB). This basin consists of Monterey, Santa Cruz, and San Benito counties. The Monterey Bay Air Resources District (MBARD) regulates air quality in the North Central Coast Air Basin.

The North Central Coast Air Basin is considered in attainment for all federal ambient air quality standards. The basin is considered in non-attainment transitional for state ambient air quality standards for ozone and non-attainment for airborne particulate less than 10 microns in diameter (PM₁₀).

Noise

The project is in a rural section of Santa Cruz County. There are no residences near the highway within the project limits at any of the four culvert locations.

Environmental Consequences

Traffic and Transportation/Pedestrian and Bicycle Facilities

Vehicle and bicycle traffic through the project sites will be maintained during construction but may be temporarily and intermittently limited during certain construction activities to allow for safe operation and movement of construction equipment. No prolonged lane closures are anticipated during project construction.

Access control will be provided when necessary to allow for continued motorist, bicyclist and pedestrian access along sections of State Route 1 undergoing construction. Public access and use of existing turnouts near

each culvert site may be temporarily limited or prohibited during construction because these locations may be used as construction staging/storage sites.

Water Quality and Storm Water Runoff

The total disturbed soil area (DSA) is more than 1 acre for the whole project, and a Stormwater Pollution Prevention Plan (SWPPP) will be developed and implemented. During construction, each culvert location will require the installation of temporary Best Management Practices. Where possible, the project may install permanent Best Management Practices as part of the project design. During the rainy season (October 15 to April 15), Best Management Practices will be implemented at all times during project construction at all active work sites. It is anticipated that water quality issues are not expected if they are addressed during planning, design and construction of the project.

Air Quality

With most construction projects, there will be a short-term temporary increase in air emissions and fugitive dust during the construction period. Use of heavy equipment can generate fugitive dust resulting from excavations, soil transport and subsequent fill operations. Some dust generation is expected from the earthwork component of this project. Equipment emissions can vary from day-to-day depending on the level of activity, type of operations, and prevailing weather conditions.

Due to the small scope of work and its location, the project has low potential to affect air quality in the region. With the application of standard construction dust and emission minimization practices and procedures, it is anticipated that project emission of particulate matter (dust) and equipment emission will be well within the Monterey Bay Air Resources District threshold.

Noise

A short-term increase in local noise is expected as a result of construction activities. The amount of increased noise will vary with the frequency of construction activities and the types of equipment used by the contractor. Due to the rural location and small scale of the project, the project has a low potential to generate noise-related impacts.

Adverse noise impacts from construction are not anticipated because construction activities would be temporary and intermittent. Caltrans Standard Specifications for noise control will be implemented.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce the potential impacts to less than significant under CEQA for construction related impacts:

Traffic and Transportation/Pedestrian and Bicycle Facilities

1. Traffic control will be used during construction.
2. Turnouts used for construction will be cleared and reopened when work in the vicinity has been completed.
3. Pedestrian and bicycle access will be maintained for trailheads and designated parking areas during construction.

Water Quality and Storm Water Runoff

1. Energy dissipation material will be placed at the outlet of all discharge locations of the storm drainage system to minimize the potential for erosion.
2. All disturbed soil areas will be revegetated as soon as work at a specific area is completed.
3. Locations of the excess material stockpiles will be identified in the Stormwater Pollution Prevention Plan. The stockpiles will be located in an area that is protected from run-on and away from concentrated flows of storm water, drainage course, and inlets.
4. Concrete washout area(s) will be identified in the Stormwater Pollution Prevention Plan.
5. The Stormwater Pollution Prevention Plan will address temporary sediment and erosion controls for the drainage associated with each culvert. During both the rainy and non-rainy seasons, sediment control barriers will be installed to protect the drainage from any potential storm and non-storm water discharges at all times.

The following avoidance and minimization measures will be implemented to reduce the potential impacts associated with project construction.

Air Quality

1. The Caltrans Standard Specifications sections pertaining to dust control and dust palliative application are required for all construction contracts and would effectively reduce and control construction-emissions impacts.
2. The provisions of Caltrans Standard Specification Section 10-5 "Dust Control" and Section 14-9 "Air Pollution Control" require the contractor to comply with all California Air Resources Board and Monterey Bay Air Resources District rules, ordinances and regulations.
3. A project-level storm water pollution prevention plan (SWPPP) will be applied to address water pollution control measures that cross-correlate with standard dust emission minimization measures such as covering soil stockpiles, watering haul roads, watering excavations and grading areas, and so on.

Noise

1. Whenever possible, construction work will be done during the day. If nighttime construction is necessary, the noisiest construction activities should be done as early in the evening as possible. Caltrans Standard Specifications Section 14-8.02 requires the contractor to control and monitor noise resulting from work activities and not to exceed 86 dBA-max at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.
2. Each internal combustion engine, used for any purpose on the job or related to the job, will be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine will be operated on the job site without an appropriate muffler.
3. Notify the public in advance of the construction schedule when construction noise and upcoming construction activities likely to produce an adverse noise environment are expected. This notice will be given two weeks in advance. Notice will be published in local news media of the dates and duration of proposed construction activity. The District 5 Public Information Office posts notice of the proposed construction and potential community impacts after receiving notice from the Resident Engineer.
4. Limit all phases of construction to acceptable hours, Monday through Friday.
5. Shield especially loud pieces of stationary construction equipment.
6. Locate portable generators, air compressors, etc. away from sensitive noise receptors.
7. Limit grouping major pieces of equipment operation in one area to the greatest extent feasible.
8. Place heavily trafficked areas such as the maintenance yard, equipment, tools and other construction-oriented operations in locations that would be the least disruptive to surrounding sensitive noise receptors.
9. Use newer equipment that is quieter and ensure that all equipment items have the manufacturer's recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators intact and operating.
10. Consult District 5 noise staff if complaints are received during the construction process.

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 the

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, 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.

The 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 CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations Section 1508.7.

Affected Environment

The Resource Study Area is identified by considering the effects that past, present and current reasonably foreseeable future projects may have or could have on the local population of a species and its associated habitat. The boundary of the Resource Study Area for a cumulative impact analysis is often broader and larger than the boundary used for project-specific analysis (e.g., biological study area).

The boundary of the Resource Study Area is identified as the federally designated California Red-Legged Frog Critical Habitat Unit Santa Cruz County 1 (SCZ-1) because the project may affect the California red-legged frog and its associated habitats. This species depends on aquatic, riparian and upland habitats, so consideration of the effects of past, present and reasonably foreseeable activities on these habitats provide the basis for this cumulative impact analysis. The Resource Study Area identified for the California red-legged frog cumulative impact analysis is presented in Figure 2-10.

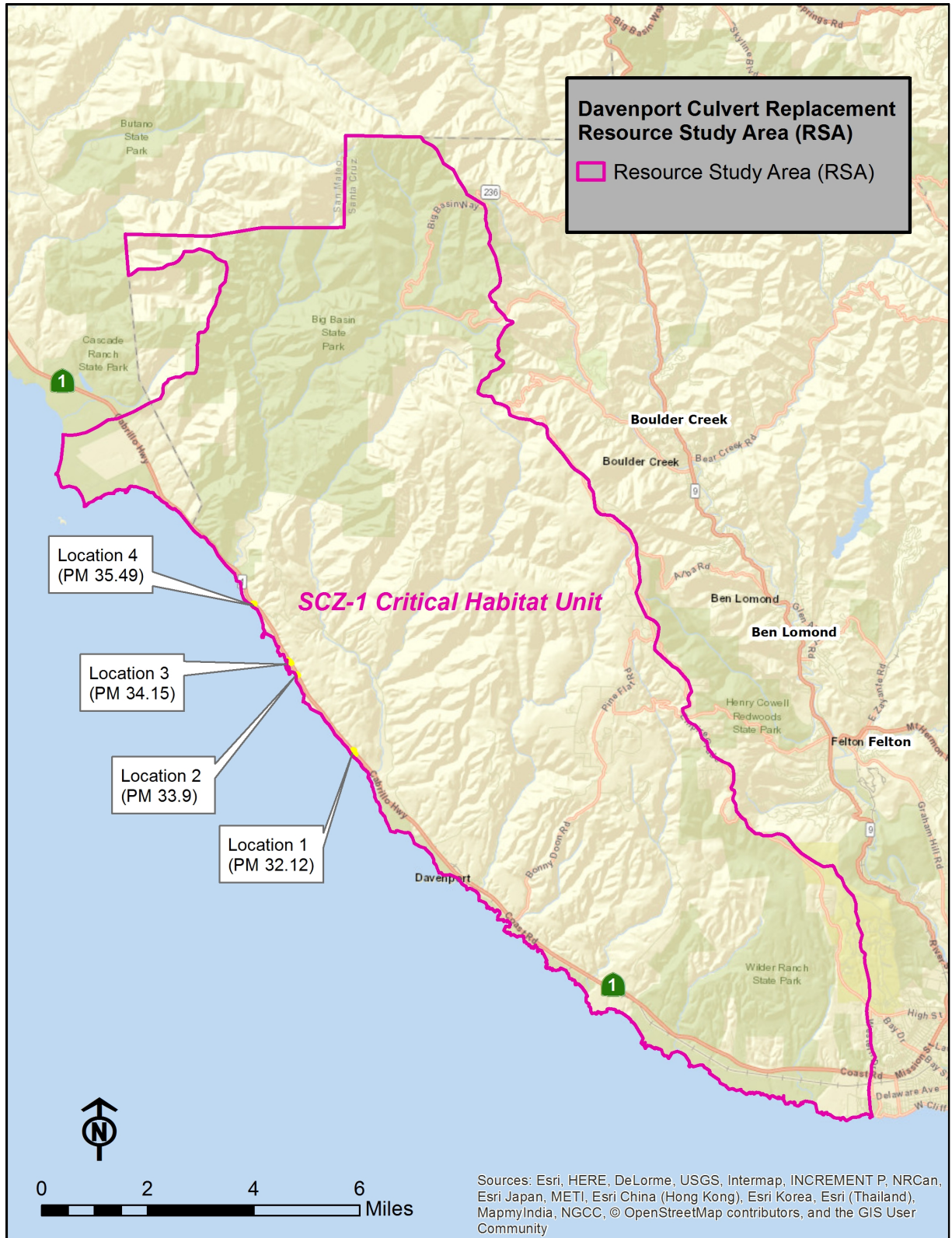


Figure 2-10 Resources Study Area Map

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The Resource Study Area covers approximately 72,249 acres of land and is located along the coastline of northern Santa Cruz County.

Information contained in the Natural Environment Study completed on February 2019 was used for this section.

California Red-Legged Frog

The California red-legged frog was listed as a federally threatened species in 1996 and is considered a California species of special concern. The historic range for the California red-legged frog extended along the coast from southern Mendocino County and inland from the vicinity of Redding, California to northwestern Baja California, Mexico. Currently, California red-legged frogs are found mostly in the coastal streams and wetlands of Monterey, San Luis Obispo and Santa Barbara counties. It is estimated that this species has been eliminated from about 70% of its historic range due to habitat loss and destruction and possibly due to the introduction of predatory species such as the American bullfrog.

A Final Recovery Plan for this species was approved in 2002. In areas that have been designated critical habitat, some form of management will need to take place to address current and future threats to the species and maintain the physical and biological features necessary for conservation of the species. According to the Recovery Plan for the California Red-legged Frog, delisting of the species could occur by 2025 if recovery criteria are met (U.S. Fish and Wildlife Service, 2002, Recovery Plan for the California red-legged frog).

The Resource Study Area contains California red-legged frog critical habitat that encompasses aquatic, riparian and upland habitats. The region within the Resource Study Area is essential for the conservation of the California red-legged frog as it connects occupied sites along the coast to sites farther inland. The Resource Study Area also contains high quality permanent and ephemeral aquatic habitat for breeding and nonbreeding, as well as upland habitat for dispersal, shelter and foraging.

Within the Resource Study Area, the population of California red-legged frogs is stable due to the rural character of the area, lack of historic developments, and recent efforts to restore the species. Regionally, critical habitat for the California red-legged frog remains stable but faces threats from ongoing development, agriculture and habitat degradation.

Threats to the California red-legged frog within the Resource Study Area are associated with habitat loss—commonly a result of water diversion, erosion, soil compaction and invasive weeds—resulting from cattle grazing and timber extraction activities.

Environmental Consequences

Information on current and probable future projects were obtained from Caltrans and the County of Santa Cruz Planning Department.

Within the Resource Study area, one reasonably foreseeable project has been identified:

- Santa Cruz Coastal Restoration and Reuse Plan – Davenport Cement Plant. The project plans reuse the currently closed Davenport Cement Plant property for alternative land uses opportunities that could stimulate redevelopment in the region that would provide benefits to the community of Davenport and local economy. Some of the proposed land use opportunities includes; coastal access and recreation, restoration and preservation of biological resources, preservation of historic resources, job growth, and housing. Since 2016, the County, the community and the landowners have been engaged in a process to identify financially viable development alternatives. The proposed project is located between the town of Davenport and the New Town Neighborhood, adjacent of State Route 1, on the inland hills of the Pacific Coast. The project involves six parcels comprising approximately 172 acres. The Draft Santa Cruz Coastal Restoration and Reuse Plan was prepared in October 2018.

California Red-Legged Frog

No pertinent population data for California red-legged frogs specific to the Resource Study Area could be found during the literature review for the Natural Environment Study. However, threats to potential habitat for the California red-legged frog within the Resource Study Area are low, due to the rural character of the area and overall lack of historic and proposed development.

Construction of the Davenport Culverts Replacement project will result in temporary and permanent impacts to California red-legged frog critical habitat. The project would be contributing to a cumulative impact within the Resource Study Area. The project will result in 2.90 acres of total impact, which is approximately 0.004% of the entire Resource Study Area. While construction activities could contribute to the loss of the California red-legged frog species and its associated habitats, the potential for adverse cumulative impacts is estimated to be very low when considering the relatively small amount of potential habitat that would be affected in relation to the total amount of habitat that occurs in the region, and the low amount of take that would likely occur. The project will also include invasive species removal and native plant revegetation that is anticipated to improve the potential habitat for California red-legged frogs.

According to the Draft Santa Cruz Coastal Restoration and Reuse Plan for the Davenport Cement Plant (2018), portions of the site is occupied by California red-legged frogs. Restoration of for California red-legged frog

habitat is being planned as part of the project. California red-legged frogs and its associated habitats are not specifically discussed in the document but are generally discussed as Biological Resource needing preservation and restoration. Anticipated and documented presence of California red-legged frogs are identified on maps that are included in the document.

Based on the analysis of cumulative impacts to California red-legged frog in the Resource Study Area, this analysis has found that the Davenport Culvert Replacement project will not result in a significant cumulative impact on the species or its habitats within the Resource Study Area.

If considered in a cumulative effect context, the Davenport Culvert Replacement project is not anticipated to substantially contribute to adverse cumulative impacts to the California red-legged frog in the Resource Study Area because the impacts to potential upland habitat will be small in scale, impacts to aquatic habitat will be very small, and the project will fully mitigate for impacts to riparian habitats on-site. It is anticipated that mitigation and project site restoration implemented as part of the project will offset impacts caused by the project.

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Chapter 3 CEQA Evaluation

3.1 Determining Significance under CEQA

The project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Federal Highway Administration's responsibility for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and executed by the Federal Highway Administration and Caltrans. Caltrans is the lead agency under CEQA and NEPA.

One of the main differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement, or a lower level of documentation, will be required. NEPA requires that an Environmental Impact Statement be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated, and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Each and every significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an Environmental Impact Report. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant With Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 to provide you with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact: See Section 2.1.2 Visual/Aesthetics.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact: See Section 2.1.2 Visual/Aesthetics.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant with Mitigation Incorporated: See Section 2.1.2 Visual/Aesthetics.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact: See Section 2.1.2 Visual/Aesthetics.

3.2.2 Agriculture and Forest Resources

CEQA Significance Determinations for 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 Department 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?

No Impact: See beginning of Chapter 2.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact: See beginning of Chapter 2.

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))?

Less Than Significant Impact: It is anticipated that the project will require approximately 1.0 acre of permanent right-of-way from the Big Creek Lumber Company for culvert 4. The partial property acquisition is required for slope stabilization/restoration and permanent access easement. The property acquisition is not anticipated to conflict with current timberland use or activities for Big Creek Lumber Company.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

Less Than Significant Impact: See response to questions c).

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?

No Impact: The project is limited to culvert replacement and would not result in other changes to surrounding farmland or timber land that could result in additional changes to farmland or forest land use.

3.2.3 Air Quality

CEQA Significance Determinations for Air Quality

Where available, the significance criteria established by the applicable air quality management district 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?

No Impact: The project involves replacing existing culvert structures and is not expected to conflict with existing air quality plan for the region.

b) 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?

No Impact: The project is not within a non-attainment region for air quality.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact—See beginning of Chapter 2. The project vicinity is rural and sparsely populated. The project is anticipated to temporarily effect air quality during construction, but sensitive receptors are not anticipated to be exposed to substantial concentrations of pollutants.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact—See response to question c).

3.2.4 Biological Resources

CEQA Significance Determinations for 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?

Less Than Significant with Mitigation Incorporated: See Sections 2.2.3 Plant Species, 2.2.4 Animal Species and 2.2.5 Threatened and Endangered Species.

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 U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated: See Section 2.2.1 Natural Communities.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact: See Section 2.2.1 Natural Communities.

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?

Less Than Significant Impact: See Section 2.2.4 Animal Species and Section 2.2.5 Threatened and Endangered Species.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact: See Section 2.2 Biological Environment.

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?

Less Than Significant Impact: See Section 2.2 Biological Environment.

3.2.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

No Impact: See beginning of Chapter 2.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

No Impact: See beginning of Chapter 2.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

No Impact: See beginning of Chapter 2. The project is not anticipated to encounter human remains during construction.

3.2.6 Energy

CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact: See Section 3.3, Climate Change.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact: See Section 3.3 Climate Change.

3.2.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause 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?

Less Than Significant Impact: A fault line identified as the Greyhound Rock Fault is mapped in the Point Ano Nuevo Quad of the Alquist-Priolo Earthquake Fault Zoning Map. The fault line crosses the northern project limits, near Swanton Road. However, the project will not involve work directly on the fault line.

ii) Strong seismic ground shaking?

Less Than Significant Impact: The culverts are located on alluvial deposits that could potentially be affected by strong seismic ground shaking. The project will incorporate appropriate design elements to minimize hazards that could result from strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact: The culverts are located on a drainage feature where liquefaction conditions could be present and could potentially be affected by strong seismic related ground failure. The project is anticipated to improve the drainage characteristics of the area and reduce the potential impact of seismic-related ground failure.

iv) Landslides?

Less Than Significant Impact: The project is located along coastal bluffs that have the potential for soil erosion and landslides during large storm events. The construction of the new culverts will improve drainage in the area which will reduce the occurrence of erosions and landslides

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact: The project will reduce soil erosion with the construction of the new culverts and top soil is not present in the project area.

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?

Less Than Significant Impact: The project is located along coastal bluffs that have the potential to be unstable due to exposure to natural weathering. The project intends to minimize drainage erosions and will include current design standards that would protect the new culverts from potential damage or failure.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact: The project is not located on any known expansive soils.

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?

No Impact: The project does not involve the construction of alternative waste water systems.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact: The project will not directly or indirectly impact paleontological resources or unique geological feature as none are identified in the project area.

3.2.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact: The proposed project is not anticipated to generate enough greenhouse gas emissions to significantly impact the environment. Construction related greenhouse gas emissions will be unavoidable due to material processing, delivery, on-site construction

equipment and potential traffic delays. Emissions will be produced at different levels throughout the construction phase. Frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. Greenhouse gas emission discussion was based on Climate Change guidance provided by the Division Environmental Analysis. See section 3.3, Climate Change.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact: The proposed project would not conflict with plans, policy or regulations for reducing emission greenhouse gasses. All construction contracts will include all Caltrans Standard Specifications that require compliance with all Air Resources Board's rules, regulations ordinances and statues, some of which can contribute to reducing construction Greenhouse Gas emissions (for example, idling equipment restrictions, appropriate source point, etc.). See section 3.3, Climate Change.

3.2.9 Hazards and Hazardous Materials

CEQA Significance Determinations for 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?

No Impact: See beginning of Chapter 2.

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?

No Impact: See beginning of Chapter 2.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact: See beginning of Chapter 2.

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?

No Impact: See beginning of Chapter 2.

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 or excessive noise for people residing or working in the project area?

No Impact: See beginning of Chapter 2.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact: See beginning of Chapter 2.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact: See beginning of Chapter 2.

3.2.10 Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

No Impact: See beginning of Chapter 2.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact: See beginning of Chapter 2.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site;

No Impact: See beginning of Chapter 2.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

No Impact: See beginning of Chapter 2.

iii) 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; or

No Impact: See beginning of Chapter 2.

iv) Impede or redirect flood flows?

No Impact: See beginning of Chapter 2.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact: Based on available hazard mapping from Santa Cruz County, the project is not within tsunami hazard or seiche hazard zones. The project is not located within any Federal Emergency Management Agency-designated floodplain and is outside the 100-year and 500-year flood zones.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact: See beginning of Chapter 2.

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact: See beginning of Chapter 2.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact: See beginning of Chapter 2.

3.2.12 Mineral Resources

CEQA Significance Determinations for 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?

No Impact: See beginning of Chapter 2.

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?

No Impact: See beginning of Chapter 2.

3.2.13 Noise

CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

No Impact: See beginning of Chapter 2 and Section 2.3

b) Generation of excessive groundborne vibration or groundborne noise levels?

No Impact: See beginning of Chapter 2 and Section 2.3

c) For a project located within the vicinity of a private airstrip or 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?

No Impact: Las Trancas Airport, is located approximately 0.25 miles north from culvert 4 and is a private airstrip own by Big Creek Lumber Company. The airport is infrequently used and only able to accommodate small aircrafts. It is anticipated airport activities would not expose workers to excessive noise levels. The completed project will not affect operations.

3.2.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned 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)?

No Impact: The project will only involve work on existing culverts to improve existing drainage conditions. The project does not include elements that could potentially result in direct or indirect growth in the area.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact: The project occurs primarily within existing state right-of-way and would not result in displacement of people or housing.

3.2.15 Public Services

CEQA Significance Determinations for 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?

No Impact: The project involves work on existing culverts on existing locations. The project does not propose or require the provision of new governmental facilities or physical alteration of existing governmental facilities, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection.

Police protection?

No Impact: The project involves work on existing culverts on existing locations. The project does not propose or require the provision of new governmental facilities or physical alteration of existing governmental facilities, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection.

Schools?

No Impact: The project involves work on existing culverts on existing locations. The project does not propose or require the provision of new governmental facilities or physical alteration of existing governmental facilities, in order to maintain acceptable service, or other performance objectives for schools.

Parks?

No Impact: The project involves work on existing culverts on existing locations. The project does not propose or require the provision of new governmental facilities or physical alteration of existing governmental facilities, in order to maintain acceptable service, or other performance objectives for parks

Other public facilities?

No Impact: The project involves work on existing culverts on existing locations. The project does not propose or require the provision of new governmental facilities or physical alteration of existing governmental facilities, in order to maintain acceptable service, response times, or other performance objectives for other public facilities.

3.2.16 Recreation

CEQA Significance Determinations for 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?

No Impact: See beginning of Chapter 2

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?

No Impact: See beginning of Chapter 2.

3.2.17 Transportation

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact: See beginning of Chapter 2.

b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact: The proposed project is within an existing high transit corridor (Highway 1) and is not anticipated to significantly alter vehicle miles traveled.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact: The project does not include geometric design features that will substantially increase hazards. The project would be designed to reduce the potential for hazards.

d) Result in inadequate emergency access?

No Impact: See beginning of Chapter 2.

3.2.18 Tribal Cultural Resources

CEQA Significance Determinations for 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

No Impact: There are no cultural resources within the project limits.

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 will consider the significance of the resource to a California Native American tribe.

No Impact: Consultation with the Native American Heritage Commission and various Native American tribes revealed there are no Native American cultural resources within the project area.

3.2.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact with Mitigation Incorporated: See Chapter 1 and Chapter 2.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact: The project will require revegetation for disturbed areas. Caltrans often plants California native plant species and designs temporary irrigation systems to minimize water consumption. Caltrans complies with water conservation requirements and maintains a goal of reducing water consumption by 50% comparing 2013 baseline usage.

c) 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?

No Impact: The project is not anticipated to generate or transport excessive wastewater. It is anticipated that portable toilets will be provided and maintained during project construction.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No Impact: The project is not anticipated to generate excessive solid waste that could not be handled by local infrastructure or facilities. Solid waste

generated as a result of the project would be transported to appropriate and capable facilities for processing.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact: It is anticipated that the project will comply with all statutes and regulations pertaining to solid waste management.

3.2.20 Wildfire

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact: See beginning of Chapter 2.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact: The project is not anticipated to exacerbate wildfire risk that could potentially expose workers or occupants to additional wildfire hazards.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact: The project will not involve the installation or maintenance of associated infrastructure that may exacerbate fire risk or that could potentially result in temporary or permanent impacts to the environment.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less Than Significant Impact: The culverts are located downslope of the surrounding hills and downstream of local drainages. Post fire conditions upslope from the culverts have the potential to result in landslides or flooding that could affect the culverts during construction and operation. During project construction, appropriate actions will be taken in the event of an emergency to reduce the potential risk to workers. The new culverts will alter downstream

drainage to reduce the potential for erosion and reduce the risk of downstream slope failure.

3.2.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially 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?

Less Than Significant with Mitigation Incorporated: See Section 2.2 Biological Environment.

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.)

Less Than Significant Impact: See Section 2.4 Cumulative Impacts.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact: See beginning of Chapter 2, and Section 2.3

3.3 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 (also known as 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 concerned mostly with the

emissions of greenhouse gases generated by human activity, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation.¹ In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of greenhouse gas emissions.² The dominant greenhouse gas emitted is CO₂, 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” covers the activities and policies aimed at reducing greenhouse gas emissions to reduce or “mitigate” the impacts of climate change. “Adaptation,” on the other hand, is concerned with 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).

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,

¹ <https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014>

² <https://www.arb.ca.gov/cc/inventory/data/data.htm>

and operations and maintenance practices.³ This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability.”⁴ 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 made 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 main goal of the program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

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 U.S. Code 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

³ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

⁴ <https://www.sustainablehighways.dot.gov/overview.aspx>

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. Environmental Protection Agency's authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts v. Environmental Protection Agency* (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. Environmental Protection Agency 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 Environmental Protection Agency's assessment of the scientific evidence that form the basis for Environmental Protection Agency's regulatory actions.

The U.S. Environmental Protection Agency 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 2010⁵ and significantly increased the fuel economy of all new passenger cars and light trucks sold in the 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 National Highway Traffic Safety Administration 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 the National Highway Traffic Safety Administration, Environmental Protection Agency, and Air Resources Board will decide on the Corporate Average Fuel Economy (CAFE) and greenhouse gas emissions standard stringency for model years 2022–2025. The National

⁵ <http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq>

Highway Traffic Safety Administration has not formally adopted standards for model years 2022 through 2025. However, the Environmental Protection Agency 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 Environmental Protection Agency to reopen the review and reconsider the mileage target.⁶

The National Highway Traffic Safety Administration and Environmental Protection Agency 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 CO₂ 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, ordered 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 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.

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 the Air Resources Board 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

⁶ <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>

reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires the Air Resources Board 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 established 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 set 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. The Air Resources Board 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 Air Resources Board 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 required state entities under the direction of the governor, including the Air Resources Board, 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 established 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 the Air Resources Board to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO₂e). 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 the Air Resources Board 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 the Air Resources Board in 2008 and must be updated every 5 years. The Air Resources Board approved the First Update to the Climate Change Scoping Plan on May 22, 2014, and the board 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.

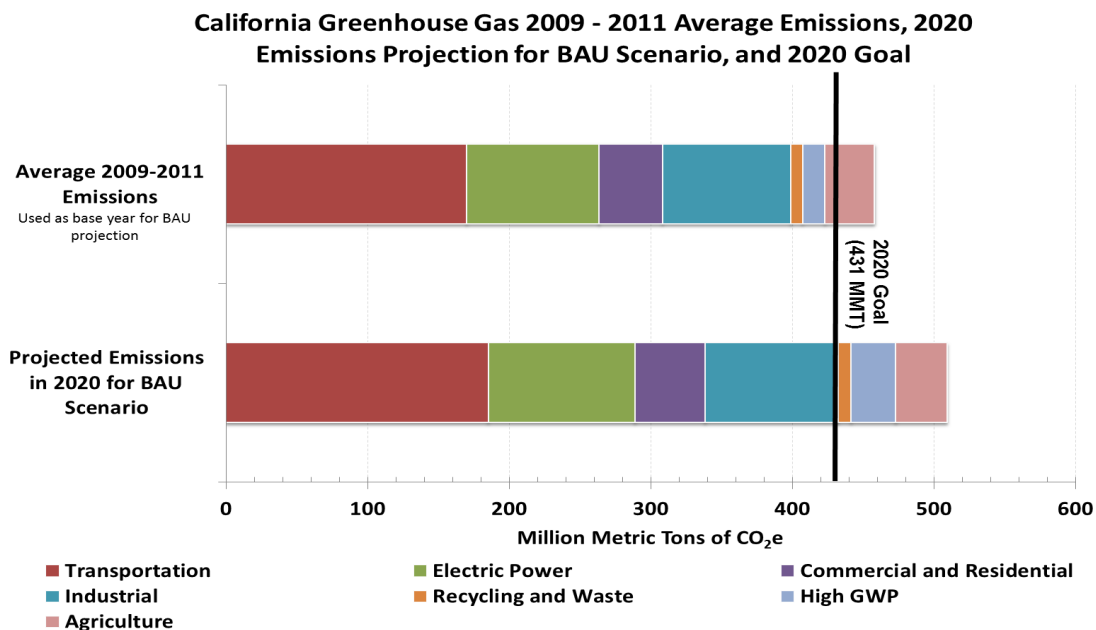
The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions. As part of its supporting documentation for the updated Scoping Plan, the Air Resources Board released the greenhouse gas inventory for California.⁷ The Air Resources Board 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 3-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists the Air Resources Board in demonstrating

⁷ 2017 Edition of the GHG Emission Inventory Released (June 2017):
<https://www.arb.ca.gov/cc/inventory/data/data.htm>

progress toward meeting the 2020 goal of 431 MMTCO₂e.⁸ The 2017 edition of the greenhouse gas emissions inventory (released in June 2017) found total California emissions of 440.4 MMTCO₂e, 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 MMTCO₂e total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 MMTCO₂e.



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

Figure 3-1 2020 Business-as-Usual (BAU) Emissions Projections 2014 Edition

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

⁸ The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4)

contributions of all other sources of greenhouse gas.⁹ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, you must compare the incremental impacts of the project 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.

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.

Construction greenhouse gas emissions, modeled as carbon dioxide equivalent (CO₂e), were estimated using the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, version 8.1.0. Construction is scheduled to take approximately 100 working days, and the estimated CO₂e emissions are 145 metric tons.

All construction contracts include Caltrans Standard Specifications that require compliance with all Air Resources Board and local air district rules, regulations, ordinances, and statutes. Common regulations, such as idling restrictions, can help reduce construction greenhouse gas emissions.

CEQA Conclusion

While the project will result in a slight temporary 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'

⁹ 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 District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

determination that the absence of further regulatory or scientific information related to the greenhouse gas emissions and CEQA significance 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 in AB 32 and SB 32, then-Governor Edmund G. Brown Jr. identified key climate change strategy pillars (concepts). See Figure 3-2. 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.

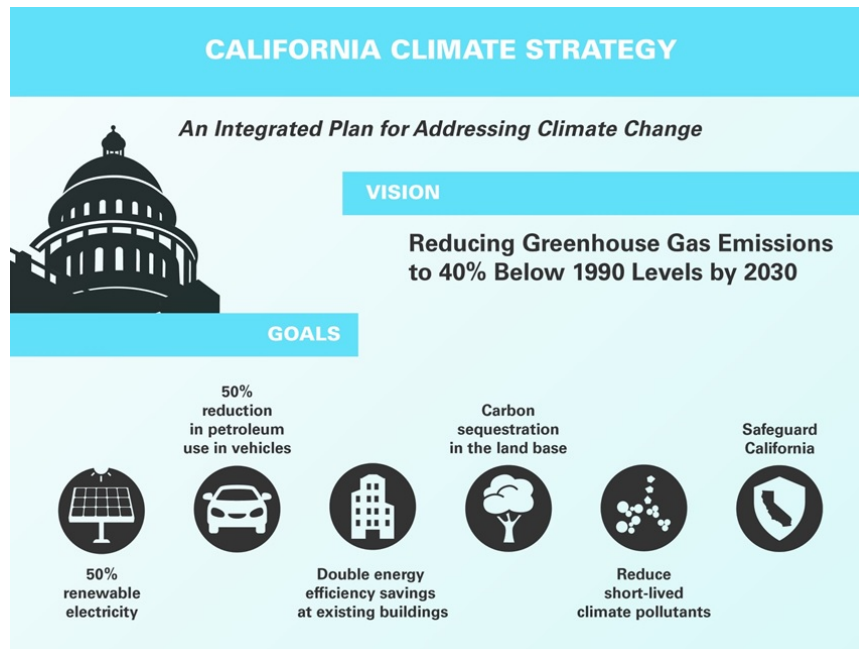


Figure 3-2 Governor's Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

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 set 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 Air Resources Board 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 California Transportation Plan to meet California's climate change goals under AB 32. Accordingly, the California Transportation Plan 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 have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, California Transportation Plan 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 the following:

- 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).

The 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.

1. The project will revegetate all disturbed soil areas following completion of construction. Landscaping reduces surface warming and, through photosynthesis, removes carbon dioxide from the atmosphere.
2. According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District rules, ordinances, and regulation in regard to air quality. Common regulations such as idling restrictions and properly maintaining engines can help reduce greenhouse gas emissions from idling construction vehicles.

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, plan 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, and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011¹⁰, 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 a U.S. Department of Transportation 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 Department of Transportation to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions."¹¹

To further the Department of Transportation Policy Statement, in December 15, 2014, the Federal Highway Administration issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*).¹² This directive established a 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 to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation's transportation systems.

¹⁰ <https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience>

¹¹ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

¹² <https://www.fhwa.dot.gov/legisregs/directives/orders/5520.cfm>

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.¹³

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)*,¹⁴ 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 (Dec 2009),¹⁵ 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)*.

Then-Governor Jerry Brown enhanced the overall adaptation planning effort by signing Executive Order B-30-15 in April 2015, requiring state agencies to

¹³ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

¹⁴ *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.

¹⁵ <http://www.climatechange.ca.gov/adaptation/strategy/index.html>

factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrates 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 update¹⁶ finalized 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.

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, increased frequency and intensity of storms and wildfires, rising temperatures, and rising sea levels. Caltrans is actively engaged 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.

¹⁶ <http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/>

Chapter 4 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 with 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.

4.1 Environmental Coordination

Biological Resource Coordination

- **January 20, 2016:** Caltrans Associate Biologist Paul Andreano submitted an online request through the U.S. Fish and Wildlife Service IPaC website (IPaC 2016) for an official U.S. Fish and Wildlife Service species list for the project area. The species list was received that day.
- **July 11, 2017:** Paul Andreano submitted an online request through the U.S. Fish and Wildlife Service IPaC website (IPaC 2017) for an updated official U.S. Fish and Wildlife Service species list for the project area. The species list was received that day.
- **December 1, 2017:** Paul Andreano submitted an online request through the U.S. Fish and Wildlife Service IPaC website (IPaC 2017) for an updated official U.S. Fish and Wildlife Service species list for the project area. The species list was received that day.
- **December 1, 2017:** Paul Andreano submitted an online request via email for an official National Marine Fisheries Service species list for the project area. The species list was received that day.
- **May 15, 2018:** Paul Andreano submitted online requests through the U.S. Fish and Wildlife Service IPaC website (IPaC 2018) and via email to the National Marine Fisheries Service for updated official species lists for the project area. The species lists were received that day.
- **October 29, 2018:** Paul Andreano submitted online requests through the U.S. Fish and Wildlife Service IPaC website (IPaC 2018) and via email to National Marine Fisheries Service for updated official species lists for the project area. The species lists were received that day.

- **September 11, 2019:** Paul Andreano obtained formal consultation letter from the USFWS for use of a Programmatic Biological Opinion for California red-legged frog.

Cultural Resource Coordination

- **December 22, 2017:** Terry Joslin submitted 12 letters to regional Native American tribes as part of the initiation of Section 106 consultation and formal notification required under AB-52. Invitation for consultation was offered and no formal consultation was requested by recipients.

4.2 Public Circulation

The Initial Study with Proposed Mitigated Negative Declaration was circulated for public review and comment on June 27, 2019. The public review and comment period for this project ended on July 29, 2019 (33-day period). A Notice of Intent to Adopt a Mitigated Negative Declaration and Opportunity for a Public Hearing was published in the local newspaper (Santa Cruz Sentinel) on Thursday June 27, 2019. The Notice of Intent and Opportunity for a Public Hearing was also mailed to a list of stakeholders that included both government agencies and private citizen groups who occupy and have interests in the project area (Chapter 6 – Distribution List). No request for a Public Hearing has been made for this project. Public comments were received during the public review period and their responses are discussed in section 4.3, Public Comments and Responses

4.3 Public Comments and Responses

1. California Department of Fish and Wildlife, July 9, 2019

Robert Stanly from California Dept. of Fish and Wildlife submitted an email informing Caltrans that the project should:

- i) Include discussion of fish passage and fish impediments associated with each culvert system.
- ii) Conduct complete assessment of potential barriers to anadromous fish as part of SB-857.
- iii) Discuss in the environmental document for each culvert if fish passage is not feasible due to natural conditions.
- iv) Explore ways to reduce the temporary impacts and reduce vegetation loss as result of construction access and staging.

Caltrans Response are as follows:

- i) In the Final Environmental Document, additional information has been added to the Affected Environment discussion in Section 2.2.5 – Threatened and Endangered Species. A summary is presented on the suitability of each culvert drainages to support anadromous fish and fish passage.
- ii) During Biological field visits, preliminary investigation of the Passage Assessment Database was conducted for each of the four culverts and none of the existing culverts were found to present barriers to anadromous fish. Additionally, the current condition of the drainages is too steep at the coast to convey fish. As the culverts will be replaced, Caltrans will conduct a complete PAD assessment for each new culvert when construction is complete. The completed project is not anticipated to result in alteration of the existing drainage condition.
- iii) The additional information in response to i) also applies to iii)
- iv) During preliminary project development and prior to completion of the environmental document, multiple construction methods and construction access routes for each culvert location have been considered. As a result of interdisciplinary coordination and discussion, the current proposed construction method, access strategy and staging plans is anticipated to result in the least amount of permanent and temporary disturbance to the natural environment. Due to the limitations posed by local geography, available state right-of-way, and available reasonable alternatives, the project is not able to avoid all potential impacts. In response, the project has incorporated appropriate measures in an effort to reduce or offset temporary and permanent impacts that may result from project activities. In addition, prior to project construction, additional interdisciplinary coordination and discussion would further investigate additional means and methods that could potentially reduce the project's impacts to the natural environment.

2. California Native American Heritage Commission, July 19, 2019

Gale Totton from the California Native American Heritage Commission submitted an email and a letter informing Caltrans that the draft environmental document was missing the following:

- i) No documentation of the government-to-government consultation by lead agency under AB-52 with Native American tribes and culturally affiliated to the project area.
- ii) Standard mitigation measures for inadvertent finds of Archaeological Resources, Cultural Resources, Tribal Resources or Human Resources.

Caltrans response are as follows:

- i) Documentation of government-to-government consultation has been conducted and is typically documented in the cultural technical document but not in the project's environmental document. As a response to this, a summary of cultural efforts to comply with Section 106 and AB-52 requirements is documented under Cultural Resource Coordination, in Chapter 4 of the environmental document.
- ii) The cultural technical document has determined that the Davenport culvert replacement project did not have the potential to affect any cultural resources and thus no measures were assigned to avoid, minimize or mitigate potential impacts to cultural resources. As part of Caltrans normal practice, if cultural materials are encountered during project construction, Caltrans cultural specialist will be immediately notified, and any necessary investigation would be carried out.

3. *Big Creek Lumber Company, July 22, 2019*

Janet Webb from Big Creek Lumber Company submitted an email informing Caltrans of their location directly off State Route 1, and its dependence on having access through and within the project area during their normal hours of operation. Janet Webb posed the following questions regarding the project:

- i) When will the actual work (construction) begin?
- ii) How long will the culvert replacement project last?
- iii) What sort of potential traffic delays are anticipated?

Caltrans response are as follows:

- i) The project construction is currently scheduled to begin on October 1, 2021, however, project permits may not allow for work during the wet season. If construction is not allowed to during the wet season, the begin construction would be delayed until April 2022 at the earliest.
- ii) The preliminary estimate on project duration is currently a minimum of 6 months (approximately 120 working days). Once final design of the project has been completed, the duration of project construction will be better estimated, but is not anticipated to change drastically from the preliminary estimate.
- iii) Potential traffic delays are currently unknown as it will depend on the means and methods of construction carried out by the project contractor. However, it is anticipated that any required lane closures would:

- a. Be limited to one lane.
- b. Occur Monday to Thursday, between the hours 8:30 am to 3:30 pm, during the day, and between the hours of 7:00 pm to 6:00 am if night work is required.
- c. Have a maximum wait time of 15 minutes
- d. Have a maximum traffic queue of 1.5 miles
- e. Have flaggers stationed to control traffic.

Each culvert would be constructed one at a time and one lane traffic closures would be temporary and intermittent at that culvert location. As most of the project activity would be occurring off the roadway surface, lane closures are expected to be minimal during project construction.

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Chapter 5 List of Preparers

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

Andreano, Paul. Associate Environmental Planner (Natural Sciences). B.S., Ecology and Systematic Biology, Minor in Geography, California Polytechnic State University, San Luis Obispo; more than 20 years of environmental planning and biological sciences experience. Contribution: Natural Environment Study.

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

Fowler, Matthew. Senior Environmental Planner. B.A., Geographic Analysis, San Diego State University, more than 15 years of experience in environmental planning. Contribution: Oversight of the Initial Study.

Geramaldi. Associate Environmental Planner (Generalist). B.S., Environmental Geography, California Polytechnic State University, Pomona; 3 years of environmental planning experience. Contribution: Coordinated environmental process, prepared the Initial Study.

Inkrott, Kristen. P.E., Transportation Engineer (Civil). B.S., Environmental Engineering from California Polytechnic University, San Luis Obispo; more than 20 years of experience in Water Resources and Hydraulic Engineering. Contribution: Hydraulic recommendations.

Joslin, Terry L. Associate Environmental Planner (Archaeology). M.A., Anthropology, University of California, Santa Barbara; B.S., Anthropology/Geography, California Polytechnic State University, San Luis Obispo; more than 20 years of archaeology experience. Contribution: Cultural Resource review.

Kozub, Lindsay. Associate Environmental Planner (Architectural Historian). M.A., History/Cultural Resource Management, Colorado State University; B.A., History; B.S., Business; 8 years of experience in historical research and analysis, historic preservation, and cultural resource management. Contribution: Historic Property Survey Report (HPSR).

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

Mikel, Karl J. Senior Transportation Engineer. B.S., Environmental Engineering, California Polytechnic State University, San Luis Obispo; M.S., Civil/Environmental Engineering, California Polytechnic State University, San Luis Obispo; more than 15 years professional experience in air quality and noise assessment. Contribution: Air Quality, Noise and Greenhouse Gas Memo.

Chapter 6 Distribution List

Santa Cruz County Planning Office
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060

Santa Cruz Public Library – Downtown Branch
224 Church Street
Santa Cruz, CA 95060

Davenport North Coast Association
Chairperson: Noel Garin Bock
P.O. Box 251
Davenport, CA 95017

California Department of Fish and Wildlife – Region 3
2825 Cordelia Road, Suite 100
Fairfield, CA 94534

Regional Water Quality Control Board – Region 3
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura CA, 93003-7726

California Coastal Commission
Attn: Sean Drake
1121 L St. #503
Sacramento, CA 95814

Big Creek Lumber
Attn: Janet McCrary Webb
3564 Highway One
Davenport, CA 95017

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Appendix A Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION

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*Making Conservation
a California Way of Life.*

April 2018

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

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A handwritten signature in blue ink, appearing to read "Laurie Berman".

LAURIE BERMAN
Director

*"Provide a safe, sustainable, integrated and efficient transportation system
to enhance California's economy and livability"*

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Appendix B Avoidance, Minimization and/or Mitigation Summary

The following is a summary of the avoidance, minimization and/or mitigation measures that will be incorporated into the project.

Coastal Zone Measures

The following measures will be implemented for this project in order to remain consistent with both Santa Cruz County local coastal program, Coastal Act Chapter Three Policies and reduce the potential project associated impacts to less than significant under CEQA:

1. The project will use methods that will result in the least amount of possible disturbance to the surrounding area as reasonably possible to allow for project construction. Where possible, the project will use pre-disturbed areas for construction staging, storage and/or access. Areas disturbed during project construction would be restored to pre-disturbed conditions where feasible.
2. Locations where vegetation was removed as a result of project construction activities will be revegetated at the end of project construction with native vegetation appropriate for the region. Vegetation type and quantity will follow recommendations made by the Caltrans Biologist in coordination with the Caltrans Landscape Architect.
3. Any modifications to the topography as a result of construction activities will be restored to closely match pre-construction conditions at the end of project construction. Additional topography contouring may be required to better blend with the surrounding landscape as recommended by the Caltrans Landscape Architect.
4. When necessary, brief and sporadic traffic control will be implemented to allow the traveling public continued access of the highway during project construction.
5. Appropriate Best Management Practices and erosion control devices will be implemented at all times during project construction to reduce or eliminate the potential for erosion and/or non-storm water discharges.
6. Additional measures may be implemented as conditions for the coastal development permit.

Visual/Aesthetic Measures

The potential for visual impacts as a result of this project will be reduced and will not result in significant impacts under CEQA with the implementation of the following measures:

1. Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques that save the most existing vegetation possible will be used.
2. Regrade all construction access roads, jacking/receiving sites and construction staging areas to match the adjacent natural terrain.
3. Revegetate all disturbed areas with native plant species appropriate to each specific work location.
4. If new replacement guardrail is required, the post and beams of all new guardrail will be colored and/or darkened to blend with the surroundings and to reduce reflectivity. The specific color will be determined by a Caltrans Landscape Architecture representative.
5. If vegetation control treatments are required, treatments will use a pervious surface such as crushed shale. If shale is not feasible, the surface material should match the color of the adjacent dirt to the greatest extent possible. The specific color will be determined by a Caltrans Landscape Architecture representative.

Natural Communities Measures

The potential for impacts to natural communities as a result of the project will be reduced and will not result in significant impact under CEQA with the implementation of the following measures:

1. Environmentally sensitive area fencing will be installed along the maximum disturbance limits within the area of potential impacts to minimize disturbance to adjacent habitats and vegetation.
2. Prior to the start of construction activities, environmentally sensitive areas will be delineated in the field and will be approved by the Caltrans environmental division.
3. All areas temporarily disturbed during construction will be restored to pre-project conditions. Vegetation planting will be conducted on-site and in-kind using native species appropriate for the location.

Wetland and Other Waters Measures

The following avoidance and minimization measures will be implemented to reduce the potential impacts to less than significant under CEQA for impacts to jurisdictional areas resulting from the project:

1. Prior to any ground-disturbing activities, environmentally sensitive area fencing will be installed around jurisdictional waters, coastal zone

Environmentally Sensitive Habitat Areas, and the dripline of trees to be protected within the project limits. Caltrans-defined environmentally sensitive areas will be noted on design plans and delineated in the field prior to the start of construction activities.

2. Any necessary temporary stream diversion will be timed to occur between June 1 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Deviations from this work window will be made only with permission from the relevant regulatory agencies.
3. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.
4. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional other waters and riparian habitat. At a minimum, erosion controls will be maintained by the contractor on a daily basis throughout the construction period.
5. During construction, the staging areas will conform to Best Management Practices applicable to attaining zero discharge of storm water runoff. At a minimum, all equipment and vehicles will be checked and maintained by the contractor on a daily basis to ensure proper operation and avoid potential leaks or spills.
6. Stream contours will be restored as close as possible to their original condition.
7. All permit terms and conditions will be incorporated into the project plans and specifications and will be implemented as required.

Animal Species Measures

The potential for impacts to animal species as a result of the project will be reduced and will result in less than significant impacts under CEQA with the implementation of the following measures.

Nesting Bird Species

The following measures apply to all birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. There are no formal survey protocols for most of these bird species, but the California Department of Fish and Wildlife typically requires pre-construction nesting bird surveys and avoidance of impacts to active bird nests.

1. Prior to construction, vegetation removal will be scheduled to occur from September 2 to February 14, outside of the typical nesting bird season if possible, 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 will be conducted by a biologist determined qualified by Caltrans no more than three days prior to construction. If an active nest is found, Caltrans will 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 will be avoided until a qualified biologist has determined that juveniles have fledged.

2. During construction, active bird nests will not be disturbed and eggs or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code will not be killed, destroyed, injured, or harassed at any time. Readily visible exclusion zones where nests must be avoided within 100 feet of disturbance will be established by a qualified biologist using environmentally sensitive area fencing. Work in exclusion zones will be avoided until young birds have fledged (permanently left the nest) or the qualified biologist has determined that nesting activity has otherwise ceased.
3. Trees to be removed will be noted on design plans. Prior to any ground-disturbing activities, environmentally sensitive area fencing will be installed around the dripline of trees to be protected within project limits.
4. All clearing/grubbing and vegetation removal will be monitored and documented by the biological monitor(s) regardless of time of year.

Threatened and Endangered Species Measures

No avoidance, minimization or mitigation measures are anticipated for the following species: Santa Cruz cypress, marsh sandwort, Scotts Valley spineflower, Ben Lomond spine flower, Menzies wallflower, white-rayed pentachaeta, San Francisco popcorn-flower, Scotts Valley polygonum, Zayante band-winged grasshopper, tidewater goby, Central California Coast steelhead DPS, coho salmon – Central California Coast ESU, California tiger salamander, San Francisco garter snake, marbled murrelet, western snowy plover, southwestern willow flycatcher, California least tern, least Bell's vireo and southern sea otter.

The following measures will be implemented to reduce the potential impacts to California red-legged frog and its associated habitat to less than significant under CEQA:

California Red-Legged Frog

Caltrans anticipates the project will qualify for the 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 (U.S. Fish and Wildlife Service 2011). The following measures are the applicable measures from the Programmatic Biological Opinion that will be implemented for this project:

1. Only U.S. Fish and Wildlife Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
2. Ground disturbance will 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 will survey the project area no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work begins. The U.S. Fish and Wildlife Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The relocation site will be in the same drainage to the extent practicable. Caltrans will 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 will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
5. A U.S. Fish and Wildlife Service-approved biologist will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, Caltrans will designate a person to monitor on-site compliance with all minimization measures. The U.S. Fish and Wildlife Service-approved biologist will ensure that 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 will notify the Resident Engineer immediately. The Resident Engineer will 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 will be notified as soon as possible.

6. During project activities, all trash that may attract predators or scavengers will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
7. Without the express permission of the U.S. Fish and Wildlife Service, all refueling, maintenance and staging of equipment and vehicles will occur at least 60 feet from the riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
8. Habitat contours will be returned to a natural configuration at the end of the project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Caltrans determined 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 will be limited to the minimum necessary to achieve the project. Environmentally sensitive areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.
10. Caltrans will attempt to schedule work for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum 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 will be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.

11. To control sedimentation during and after project completion, Caltrans will implement Best Management Practices 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 will 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 will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.
13. Unless approved by the U.S. Fish and Wildlife Service, water will not be impounded in a manner that may attract California red-legged frogs.
14. A U.S. Fish and Wildlife Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifastacus leniusculus*; *Procambarus clarkia*), and centrarchid fishes from the project area, to the maximum extent possible. The U.S. Fish and Wildlife Service-approved biologist will 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 will be followed at all times.
17. Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless U.S. Fish and Wildlife Service and Caltrans determined that it is not feasible or practical.
18. Caltrans will 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 will not use herbicides during the breeding season for the California red-legged frog.
- b. Caltrans will conduct surveys for the California red-legged frog immediately prior to the start of herbicide use. If found, California red-legged frogs will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur.
- c. Giant reed and other invasive plants will be cut and hauled out by hand and painted with glyphosate-based products, such as Aquamaster® or Rodeo®.
- d. Licensed and experienced Caltrans staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site.
- e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.
- f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water).
- g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 miles per hour.
- h. No herbicides will be applied within 24 hours of forecasted rain.
- i. Application of all herbicides will be done by qualified Caltrans staff or contractors to ensure that overspray is minimized, that all applications are made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will 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 will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Prior to the onset of work, Caltrans will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Invasive Species Measures

The following avoidance and minimization measures will be implemented to reduce the potential impacts of invasive species on the project to less than significant under CEQA:

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 will be imported. When practicable, invasive exotic plants in the project site will be removed and properly disposed. All invasive vegetation removed from the construction site will be taken to a 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 will be disposed of at a 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 will be avoided.
3. Construction equipment will be certified as “weed-free” by Caltrans before entering the construction site. If necessary, wash stations on-site will be established for construction equipment under the guidance of Caltrans in order to avoid/minimize the spread of invasive plants and/or seeds within the construction area.

Construction Impacts Measures

The following avoidance and minimization measures will be implemented to reduce the potential impacts to less than significant under CEQA for construction related impacts:

Traffic and Transportation/Pedestrian and Bicycle Facilities

1. Traffic control will be used during construction.
2. Turnouts used for construction will be cleared and reopened when work in the vicinity has been completed.
3. Pedestrian and bicycle access will be maintained for trailheads and designated parking areas during construction.

Water Quality and Storm Water Runoff

1. Energy dissipation material will be placed at the outlet of all discharge locations of the storm drainage system to minimize the potential for erosion.
2. All disturbed soil areas will be revegetated as soon as work at a specific area is completed.
3. Locations of the excess material stockpiles should be identified in the Stormwater Pollution Prevention Plan . The stockpiles should be

located in an area that is protected from run-on and away from concentrated flows of storm water, drainage course, and inlets. Concrete washout area(s) should be identified in the Stormwater Pollution Prevention Plan.

4. Concrete washout areas(s) will be identified in the Stormwater Pollution Prevention Plan.
5. The Stormwater Pollution Prevention Plan will address temporary sediment and erosion controls for the drainage associated with each culvert. During both the rainy and non-rainy seasons, sediment control barriers should be installed to protect the drainage from any potential storm and non-storm water discharges at all times.

The following avoidance and minimization measures will be implemented to reduce the potential impacts associated with project construction:

Air Quality

1. Caltrans Standard Specifications sections pertaining to dust control and dust palliative application are required for all construction contracts and would effectively reduce and control construction-emissions impacts.
2. The provisions of Caltrans Standard Specification Section 10-5 "Dust Control" and Section 14-9 "Air Pollution Control" require the contractor to comply with all California Air Resources Board and Monterey Bay Air Resources District rules, ordinances and regulations.
3. A project-level storm water pollution prevention plan (SWPPP) will be applied to address water pollution control measures that cross-correlate with standard dust emission minimization measures such as covering soil stockpiles, watering haul roads, watering excavations and grading areas, and so on.

Noise

1. Whenever possible, construction work will be done during the day. If nighttime construction is necessary, the noisiest construction activities should be done as early in the evening as possible. Caltrans Standard Specifications Section 14-8.02 requires the contractor to control and monitor noise resulting from work activities and not to exceed 86 dBA-max at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.
2. Each internal combustion engine, used for any purpose on the job, or related to the job, will be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine will be operated on the job site without an appropriate muffler.
3. Notify the public in advance of the construction schedule when construction noise and upcoming construction activities likely to produce an adverse noise environment are expected. This notice will

be given two weeks in advance. Notice should be published in local news media of the dates and duration of proposed construction activity. The District 5 Public Information Office will post notice of the proposed construction and potential community impacts after receiving notice from the Resident Engineer.

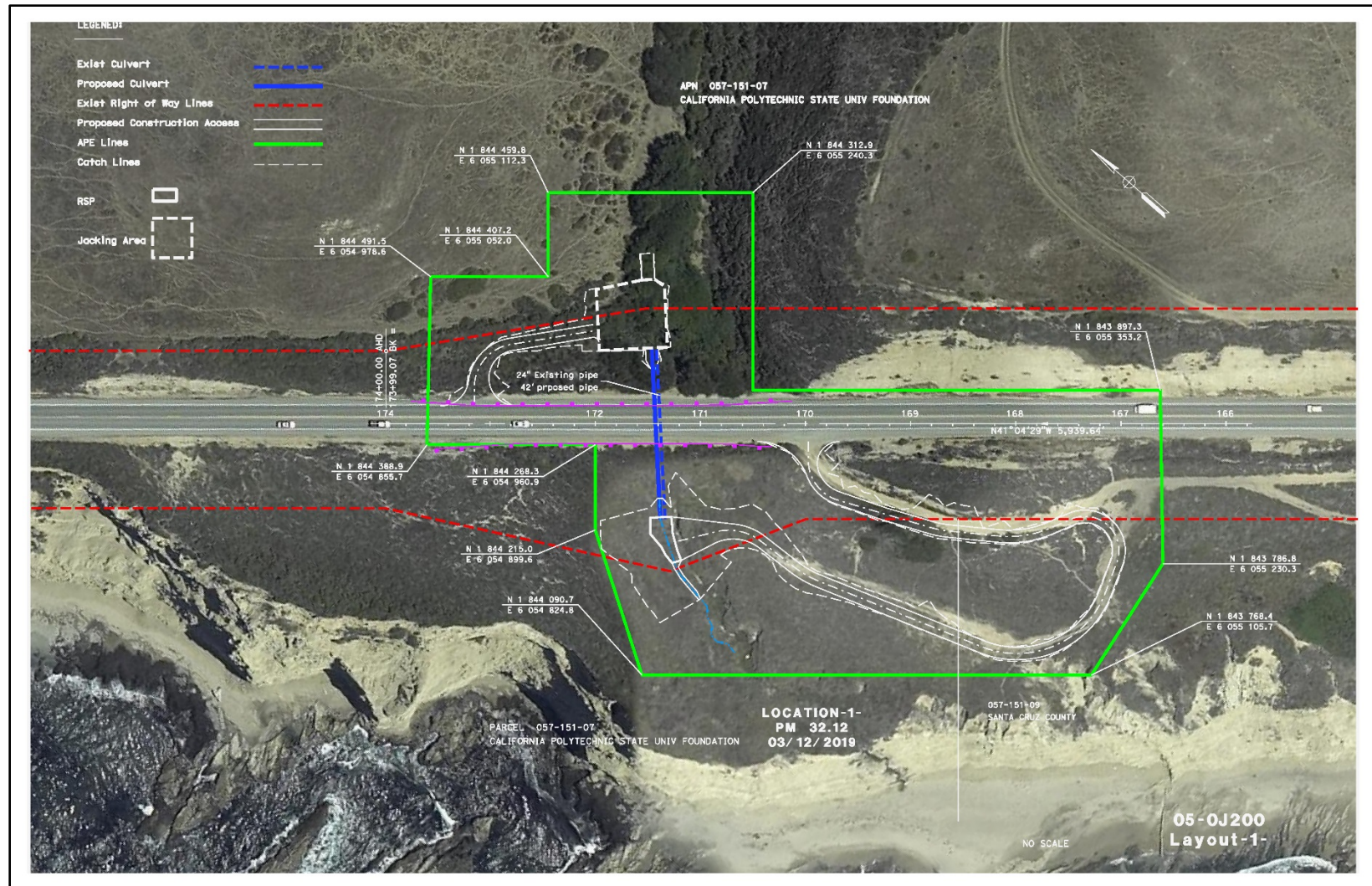
4. Limit all phases of construction to acceptable hours, Monday through Friday, as required by local ordinance.
5. Shield especially loud pieces of stationary construction equipment.
6. Locate portable generators, air compressors, etc. away from sensitive noise receptors.
7. Limit grouping major pieces of equipment operation in one area to the greatest extent feasible.
8. Place heavily trafficked areas such as maintenance yard, equipment, tool and other construction-oriented operations in locations that would be the least disruptive to surrounding sensitive noise receptors.
9. Use newer equipment that is quieter and ensure that all equipment items have the manufacturer's recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators intact and operating.
10. Consult District 5 noise staff if complaints are received during the construction process.

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Appendix C Area of Potential Effects Maps

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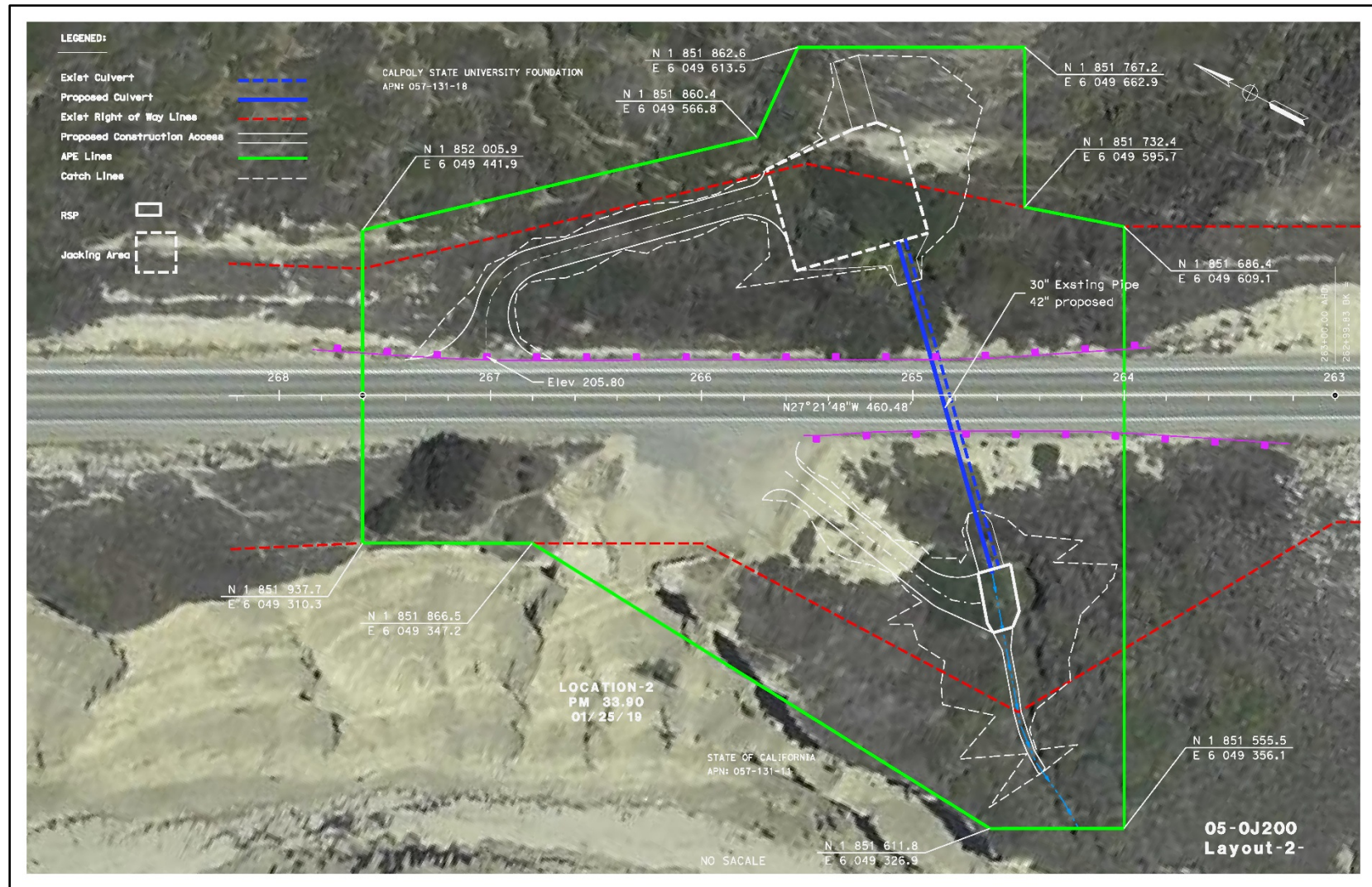
Appendix C • Area of Potential Effects Maps



Culvert Location 1 (PM 31.12)

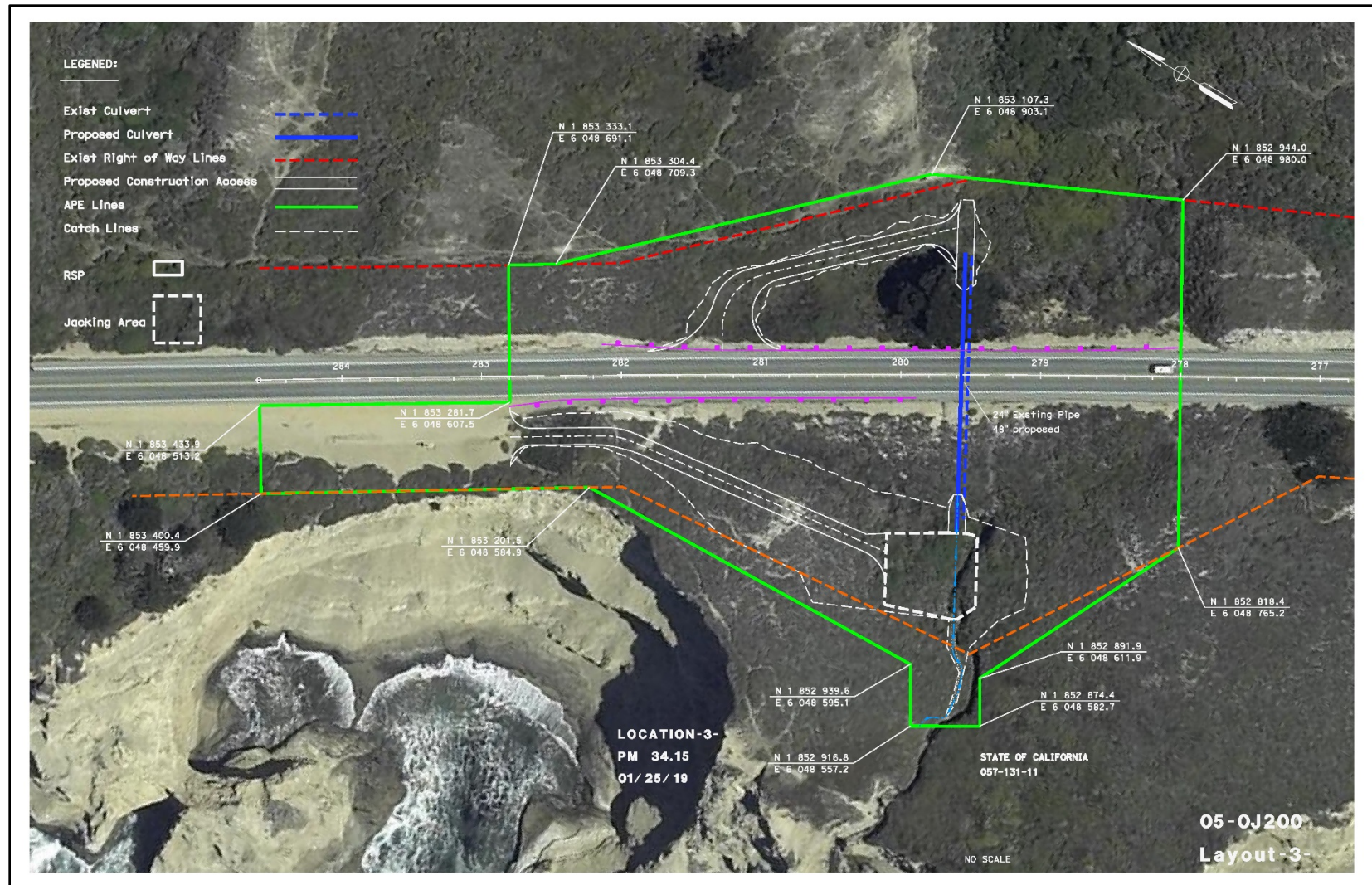
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Appendix C • Area of Potential Effects Maps



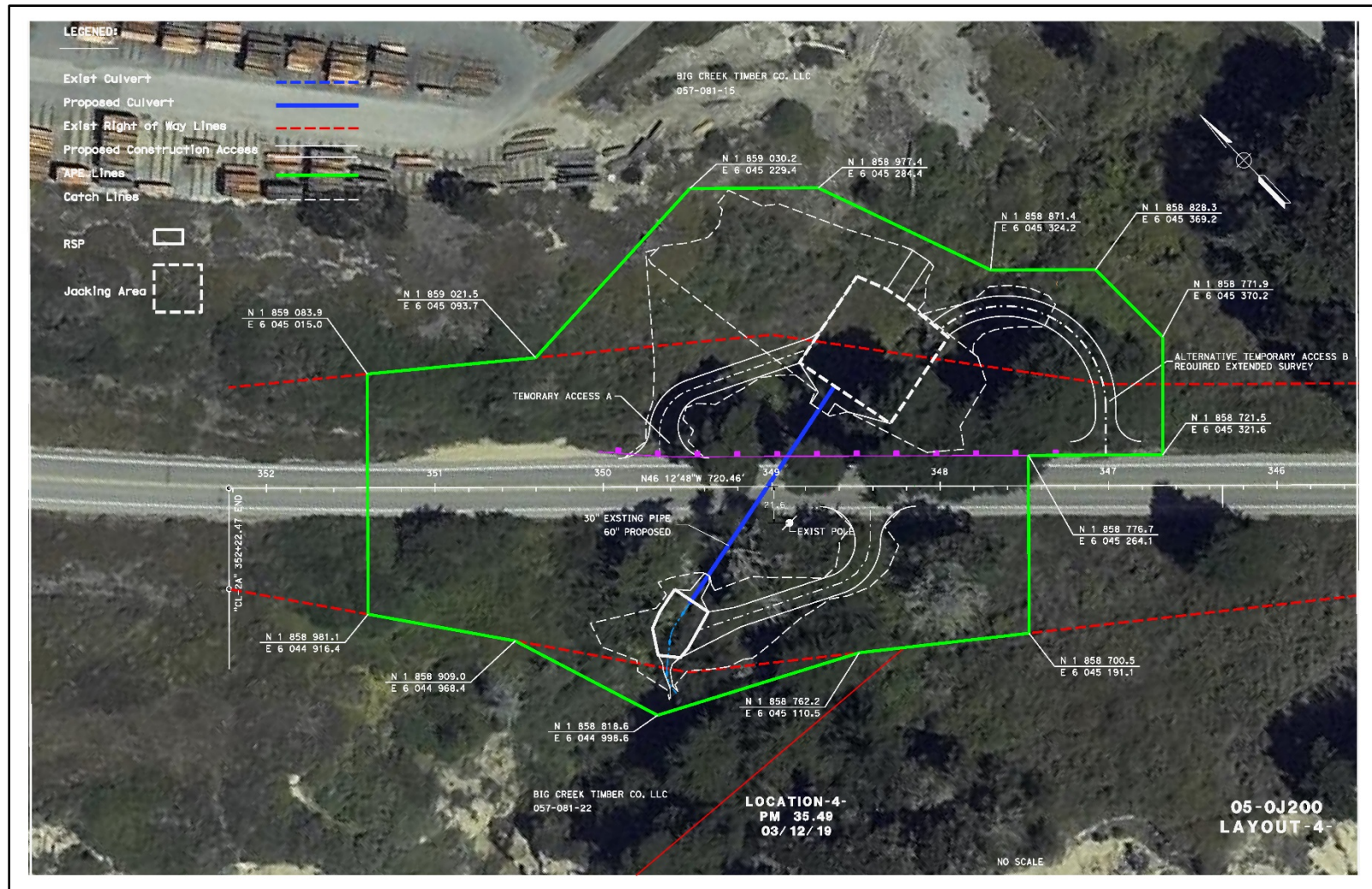
Culvert Location 2 (PM 33.90)

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Culvert Location 3 (PM 34.15)

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Culvert Location 4 (PM 35.49)

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List of Technical Studies

Hazardous Waste Report, January 8, 2018

Water Quality Assessment, January 8, 2018

Paleontology Review, January 8, 2018

Air and Noise Studies Report, April 23, 2018

Hydraulic Recommendation, December 21, 2018

Cultural Resource Review, January 3, 2019

Visual Impact Assessment, January 4, 2019

Natural Environment Study, February 2019

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