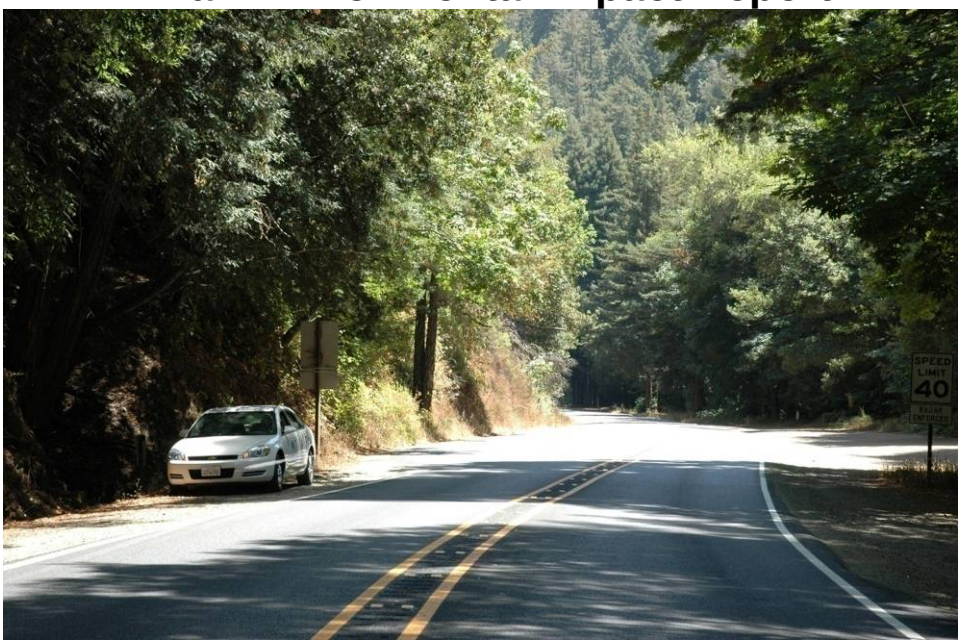
Hecker Pass Safety Improvement Project

SANTA CLARA COUNTY, CALIFORNIA
DISTRICT 4 – SCL – 152, (PM 0.14/5.20)
EA 2A2500/EFIS 0400000813

Addendum to the
Final Environmental Impact Report



Prepared by the
State of California Department of Transportation

March 2013

04-SCL-152-PM 0.14/5.2
SCH#2009042029
EA 2A2500/EFIS 0400000813

Construct safety improvements along State Route 152, from the Santa Cruz County line, to just west of the Gilroy city limits (post mile 0.14 to post mile 5.20).

ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT

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

THE STATE OF CALIFORNIA
Department of Transportation

04-26-2013
Date of Approval

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1. EXECUTIVE SUMMARY

The California Department of Transportation (Caltrans) is proposing to enhance safety at five locations within the section of State Route (SR) 152 in Santa Clara County from just east of Pole Line Road to Watsonville Road. See Figures 1 and 2 for maps of the project vicinity and location. Improvements include widening existing lanes and shoulders, improving curves, and adding a left-turn lane from eastbound SR 152 to Watsonville Road. In addition, retaining walls would be constructed at four of the locations to minimize right-of-way requirements and thereby limit impacts to the surrounding environment.

Detailed information about this safety project was provided in the Draft Environmental Impact Report (EIR)/Environmental Assessment, which was circulated to the public from March 10, 2010 to April 26, 2010. A Final EIR/Finding of No Significant Impact (FONSI) was completed in November 2010. The EIR was prepared to comply with the California Environmental Quality Act (CEQA) and the EA and FONSI were prepared to comply with the National Environmental Policy Act (NEPA).

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, a “lower level” document is often prepared for NEPA. One of the most commonly seen joint document types is an EIR/EA. Because of changes to the project, additional documentation was needed to maintain the validity of the EA, but a new or higher level document was not required. Therefore, a reevaluation was prepared separately to comply with NEPA. As part of this process, a Section 4(f) De Minimis Finding for impacts to Mount Madonna County Park was circulated to the public and the Santa Clara County Parks and Recreation Department concurred by letter with the finding. The Section 4(f) De Minimis Finding, which includes the concurrence letter, is available at www.dot.ca.gov/dist4/envdocs.htm.

This document is an addendum to the Final Environmental Impact Report (FEIR) and was prepared by Caltrans to comply with CEQA. Additional environmental studies were conducted for this addendum because of changes to the project description.

This addendum is necessary to update the project description, effects of the project and avoidance, minimization and mitigation measures. An addendum is being prepared instead of a supplemental or subsequent EIR because no new or substantially more severe significant effects will result from the modified project design, as explained below and in Section 4. While the project design has been modified since the FEIR was completed, it has not changed enough to warrant a revised Project Report.

The proposed project changes would represent a minor change in potential visual effects at Locations 1, 2, 3, and 4 (see Figure 2) based on changes to the overall dimensions of proposed retaining walls, addition of end treatments to retaining walls, and increased right-of-way acquisitions and tree removal. Because overall wall length at Location 3 would be substantially shorter than previously proposed, impacts at Location 3 would be reduced to less-than-significant. Impacts at Locations 1, 2, and 4 would remain significant even with proposed avoidance, minimization and mitigation measures. Adverse visual effects of tree removal and increased right-of-way acquisitions would increase at Location 5 (see Figure 2). However, the

proposed changes would not alter the overall impact conclusion of the original State Route 152 Safety Improvement Project's Visual Impact Assessment for this location, which identified significant impacts that could not be avoided, minimized, or mitigated below a level of significance.

Changes to the project will also affect biological resources and a historic property found to be eligible under Criteria 1 of the California Register of Historic Resources on the local level. The revised cultural impacts are described in Section 4.4. In 2009, Caltrans determined a "finding of no impact" for the historic property. Based on design changes, the new determination is that the project will have a "less than significant" impact on the historic property. The finding for all other cultural resources remains "no impact" under CEQA.

The significance determinations for biological impacts remain the same as those reported in the CEQA Checklist section of the 2010 FEIR/EA. Please see Section 4.5 for a description of the revised impacts and avoidance, minimization and mitigation measures for biological resources.

Other resources affected by changes to the project are Parks and Recreational Facilities, Farmland and Paleontology. The total area of impacts on Mount Madonna County Park has increased from .55 acres to 2.6 acres. Additional mitigation measures are discussed in Section 4.1. The amount of farmland being acquired has increased slightly and is discussed in Section 4.2. Paleontology is discussed in Section 4.6. In the CEQA Checklist of the 2010 FEIR/EA, impacts to paleontological resources were marked as "no impact." A recent Paleontological Identification Report (PIR), however, indicates that paleontological resources may be present in the project area. Based on the PIR, a new determination has been made that if paleontological resources are uncovered, the impacts would be "less than significant with mitigation."

This addendum describes the revised impacts and mitigation measures, where applicable, for visual/aesthetic resources, parks and recreational facilities, farmland, and cultural, biological and paleontology resources. All other impacts and avoidance, minimization and mitigation measures are disclosed in the FEIR/EA. Based on this addendum, only one item has changed on the CEQA Checklist in Appendix B of the FEIR/EA. As stated above, Section V (a), concerning impacts to historical resources, has changed from "no impact" to "less than significant impact." See Section 4.4 for an analysis of this change. The FEIR/EA is available online at www.dot.ca.gov/dist4/envdocs.htm.

2. PROJECT PURPOSE AND NEED

The purpose and need of the project, provided in Section 1.2 of the FEIR/EA, is included below to help the reader review this addendum.

2.1 PROJECT PURPOSE

The purpose of the project is to reduce the number of cross-centerline and run-off-the-road accidents along this SR 152 corridor.

2.2 PROJECT NEED

Within the project limits, SR 152 is a two-lane undivided conventional east-west highway, located within a rural setting of Santa Clara County. The existing highway consists of two 12-

foot-wide opposing traffic lanes with outside paved shoulders that vary from less than 1 foot to more than 8 feet in width.

Roadway Deficiencies

SR 152 within the project limits is in a heavily forested area of rural Santa Clara County. The existing alignment has sharp turns, narrow shoulders in many locations, and steep embankments and vegetation adjacent to the shoulders of the roadway. Truck-trailers over 45 feet long have been banned from SR 152 between Watsonville and Gilroy since 1986, based on, among other factors, the limited roadway width, winding alignment of the highway, and the number of truck-involved accidents[1]. Adding to the available pullout areas would increase refuge opportunities for disabled vehicles. The inability of emergency response vehicles to use shoulders and bypass stalled traffic to reach disabled vehicles delays their response time.

Improving safety along the present location of the highway cannot be accomplished without removal of vegetation, additional side-slope grading, and construction of retaining walls and other slope stability measures.

A "clear recovery zone" would be added depending on the conditions along each of the five identified sections of SR 152 within the project limits. The clear recovery zone is provided as a recovery area when errant vehicles leave the traveled way, offering the motorist the opportunity to regain control. A typical clear recovery zone, 20 feet wide on a conventional highway, is an area cleared of fixed objects adjacent to the roadway including trees, utility poles, and signs.

State Route 152/Watsonville Intersection at Location 5

There is no left-turn lane pocket at the SR 152/Watsonville Road intersection, so eastbound vehicles back up in the highway lane if a car is waiting to make a left turn onto northbound Watsonville Road. Vehicles wanting to make a left turn can increase the potential for conflicts that may result in cross-centerline accidents.

Traffic and Accident Data

A number of accidents on this segment of the highway have involved vehicles that cross the roadway centerline. Caltrans developed a list in 2004 of candidate major collision-reduction projects to the Headquarters of Traffic Safety program coordinator based on results from the Two- and Three-Lane Safety Monitoring program. Because a high number of cross-centerline accidents occurred within this portion of SR 152 during the study period, the Project was submitted and the District's recommendation was approved by District Headquarters on June 21, 2004.

The average annual daily traffic along this segment of SR 152 as of 2008 is 5,900 vehicles, and is expected to increase to 9,500 vehicles in 20 years, by 2028. An 8-year study period between October 1, 2000, and September 30, 2008, generated detailed information about the number, type, frequency, and causes of accidents along this section of SR 152. The average number of accidents along the study corridor was 1.91 per million vehicles, which was higher than the statewide average of 1.49 per million vehicles.

The study found that 29 of the 176 accidents involved vehicles that crossed the centerline. Constructing the improvements proposed as part of this project would create an upgraded

[1] Department of Transportation, special truck restriction history (http://www.dot.ca.gov/hq/traffops/trucks/routes/restrict-hist-152.htm)

roadway that would be better able to assist out-of-control motorists from crossing the centerline and would reduce cross-centerline accidents.

3. PROJECT DESCRIPTION

There have been changes to the project description since the FEIR/EA was completed in 2010. The information below describes the project and points out where changes have been made. Maps showing details for each location are also included in Appendix A. Following the FEIR/EA, Caltrans selected the Build Alternative as the Preferred Alternative. The discussion in this document is consistent with that decision.

The project is located on a section of State Route (SR) 152 that crosses the Santa Cruz Mountain Range in western Santa Clara County, which is known as Hecker Pass. It links Watsonville and SR 1 to the west with Gilroy and SR 101 to the east. See Figure 1. The proposed project would improve safety and prevent cross-centerline accidents by making the following improvements at five separate locations (See Figure 2) between postmile 0.1 and postmile 5.2:

- Improving and widening existing lanes and adding 8-foot shoulders.
- Overlaying and replacing part of the existing pavement to improve the roadway's superelevation. Superelevation is the banking or tilt of the roadway along a curve so motorists can safely maneuver the curve at reasonable speeds.
- Removing fixed objects such as poles and trees near the roadway to both improve visibility and create a "clear recovery zone" that allows drivers who go off the shoulder enough space to recover control of the car.
- Installing 10 retaining walls to prevent hillsides from slipping (Locations 1 – 4)
- Installing a left-hand turn lane from eastbound SR 152 to Watsonville Road (Location 5)
- Modifying and replacing existing drainage structures and systems
- Installing permanent warning signs.

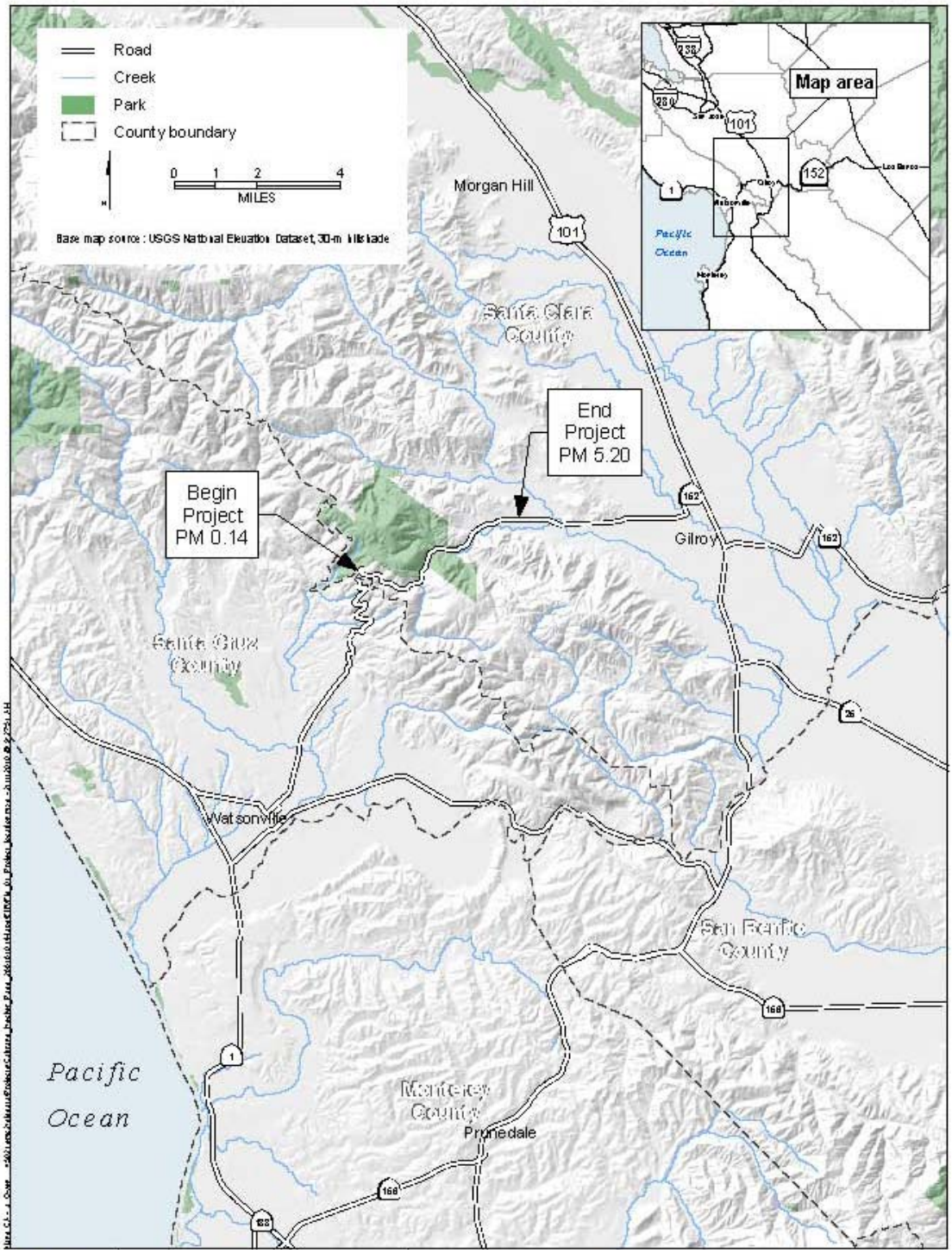

Figure 1: Project Vicinity Map

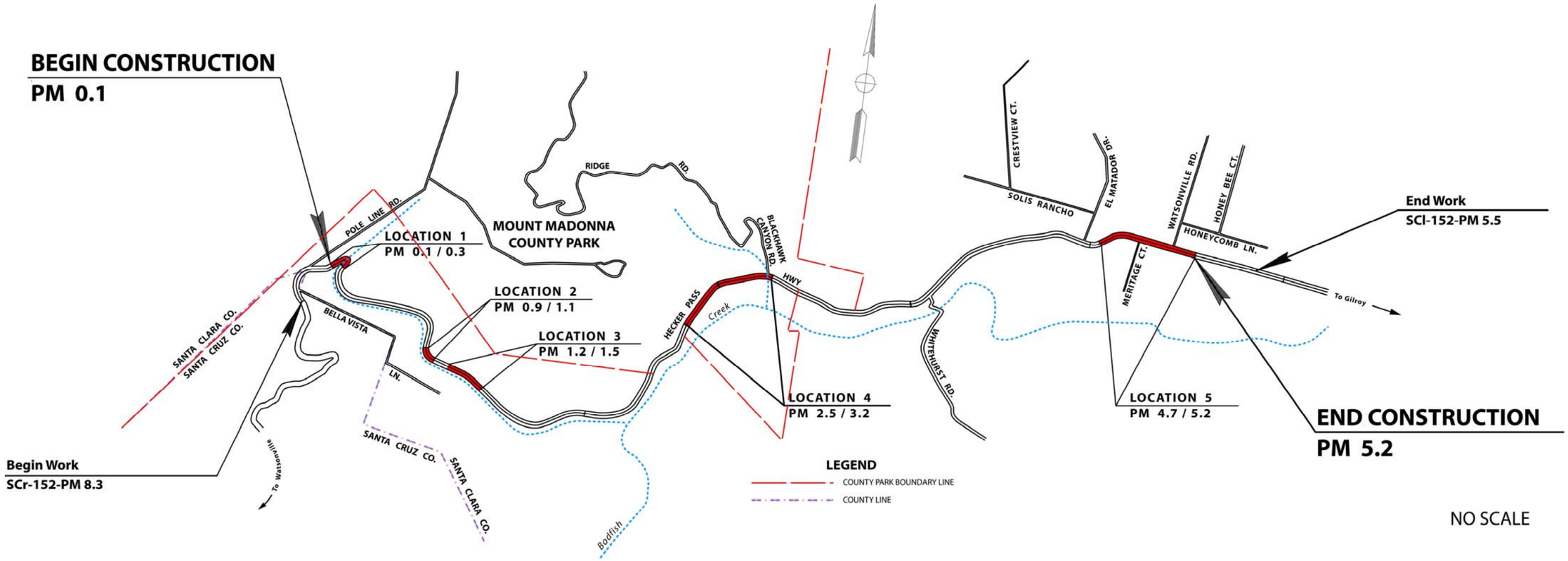

Figure 2: Project Location Map

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3.1 COMMON DESIGN CHANGES AT ALL LOCATIONS

Common design changes for all of the locations include the following:

- End treatments have been added to retaining walls to prevent drivers from crashing into the wall. The end treatments will be stained to blend into the natural appearance of the walls. (Locations 1 – 4)
- Black vinyl cable railing has been added at the top of retaining walls. (Locations 1 – 4)
- Additional drainage elements have been added as described under the description for each location below.

3.2 UNIQUE DESIGN CHANGES AT EACH LOCATION

Design changes specific to each location are described in the following sections. Please note that wall heights and lengths are approximate. Right-of-way measurements include permanent acquisitions as well as temporary construction easements at Locations 1, 3 and 5, underground easements for soil nails at Locations 1 through 4 and public utility easements at Location 5.

3.2.1 LOCATION 1 – Project Description and Changes

Location 1 extends from postmile 0.1 to postmile 0.3. The existing roadway configuration at Location 1 includes two 12-foot travel lanes with shoulders varying between 0 and 10 feet. This location also includes three existing culverts: two 18-inch corrugated metal pipes and one 42-inch reinforced concrete pipe. Project changes made at Location 1 since the 2010 FEIR/EA are listed below.

- The two proposed soil nail retaining walls (vertical masonry slab walls attached into the hillside by soil nails) in the westbound direction have changed in size. The maximum height of the first retaining wall was reduced from 17.2 feet to 13.4 feet. The length will be reduced from 256.8 feet to 220 feet, not including the end treatment. The maximum height of the second retaining wall will be reduced from 19.2 feet to 14.7 feet. The length will be increased from 207.1 feet to 221 feet, not including the end treatment.
- The amount of right of way needed has increased to approximately 0.5 acre, which will be acquired from both sides of the road. The original description called for acquiring 0.12 acre on the westbound side of the roadway only.
- Install new culverts and inlets along the retaining walls. Add rock slope protection at the outlets of two culverts to slow down the rate of drainage and prevent erosion. On the eastbound side, add a grated line drain and bioswale (vegetated channel) to filter storm water runoff. Modify the existing culverts that cross SR 152 to accommodate the widened roadway.

3.2.2 LOCATION 2 – Project Description and Changes

Location 2 extends from postmile 0.9 to postmile 1.1. The existing infrastructure at this location includes two 12-foot travel lanes with no road shoulders. Location 2 also includes one existing 18-inch corrugated metal pipe culvert and one existing 24-inch corrugated metal pipe culvert. Project changes made at Location 2 since the 2010 FEIR/EA are listed below.

- The proposed soil nail retaining wall on the westbound side has changed in size. The approximate maximum height of this wall has been increased from 29 feet to 32.6 feet. The

approximate length has been increased from 430.6 feet to 566 feet, not including the end treatment.

- The amount of right of way needed has changed to approximately 0.9 acre, which will be acquired from both sides of the road. The original description called for acquiring approximately 0.05 acre on the northern side of the roadway only.
- Add additional culverts and drainage inlets along the retaining wall on the westbound side. The existing culvert that crosses SR 152 will be extended by 5 feet to accommodate the widened roadway. The headwall to the east of the retaining wall will be removed and replaced with a 36-inch grated inlet to catch gully runoff.

3.2.3 LOCATION 3 – Project Description and Changes

Location 3 extends from postmile 1.2 to postmile 1.5. The existing infrastructure at Location 3 includes two 12-foot travel lanes with no road shoulders and one 15-foot-wide turnout on the westbound side of the road. This location also includes three existing culverts; a 30-inch, 36-inch, and 18-inch corrugated metal pipe culvert. Project changes made at Location 3 since the 2010 FEIR/EA are listed below.

- The design has changed to construct only one soil nail retaining wall on the westbound side with a maximum height of 14.1 feet. Not including end treatments, the length of this wall will be 272 feet long. Originally, the design at this location called for two soil nail walls. The first wall would have been 11.2 feet high and 167.9 feet long. The second wall would have been 10.2 feet high and 207.8 feet long. A 125-foot-long soldier pile retaining wall on the westbound side has also been removed from the project design.
- Widen the existing roadway to provide 8- to 12-foot-wide shoulders. The original design called for no shoulders to 12-foot-wide shoulders.
- The amount of right of way needed has increased to approximately 1 acre, which will be acquired from both sides of the road. The original description called for acquiring 0.07 acre on the westbound side of the roadway.
- Grade the private driveways to conform to the new alignment of the roadway.
- Remove the existing concrete barrier on the eastbound side.
- Extend the existing culvert that crosses SR 152 west of the retaining wall and replace the inlet. Add an additional culvert and drainage inlets along the retaining wall. Remove the headwall east of the retaining wall and replace it with a grated steel pipe inlet. Extend the existing culvert that crosses SR 152 at the headwall to accommodate the widened road. Modify the cross culvert at the east end of Location 3 to match the roadway and replace the inlet.

3.2.4 LOCATION 4 – Project Description and Changes

Location 4 extends from postmile 2.6 to postmile 3.2. The existing infrastructure at Location 4 includes two 12-foot travel lanes with no road shoulder. Two T-intersections in this location on the northern side of the road provide access to the Sprig Recreation Area of Mount Madonna County Park. This location also includes seven existing culverts; one 21-inch smooth interior plastic pipe/corrugated metal pipe, two 18-inch corrugated metal pipes, three 24-inch corrugated metal pipes, and one 6-foot- by 8-foot-high reinforced concrete box culvert.

- The five proposed soil nail retaining walls on the westbound side have changed in size and one Type 5 retaining wall has been added on the eastbound side. Please see Table 3-1.
- Widen the existing roadway to provide 8-foot-wide shoulders, rather than 15-foot-wide shoulders previously reported in the 2010 FEIR/EA.
- Acquire a total of approximately 4 acres of right-of-way from both sides of the roadway, which includes 2.6 acres of park land and 1.3 acres of underground easements for soil nails. The original description called for acquiring 0.55 acre on the westbound side of the roadway only.
- Extend 7 existing culverts that cross SR 152, replace inlets and add additional inlets to accommodate the widened road and retaining walls. Add new culverts and inlets along the 5 soil nail retaining walls. Remove the headwall at the existing culvert east of the Sprig Recreation Area parking lot and replace it with a grated steel pipe inlet. Remove 2 feet of the culvert that crosses the eastern entrance into the park and replace it with a flared end section.

Table 3-1: Location 4 Retaining Walls

Original Retaining Wall Name	New Retaining Wall Name	Original Maximum Height (feet)*	New Maximum Height (feet)*	Original Length (feet)*	New Length (feet)*
4A	RW 7	31.2	31.8	292.5	315
4B	RW 8	14.2	10.5	57.3	70
4C	RW 9	32.2	30.4	1056.1	1,037
4D	RW 10	23.2	19.3	584.1	568
4E	Removed	5	Removed	205	Removed
4F	RW 11	12	10.6	345	380
Added	RW 166	Added	8	Added	170

*Approximate

3.2.5 LOCATION 5 – Project Description and Changes

Location 5 extends from postmile 4.8 to postmile 5.2. The existing infrastructure at Location 5 includes 12-foot travel lanes and shoulders varying from 2 feet to 8 feet. There is a T intersection on the northern side where Watsonville Road intersects with SR 152, as well as nine commercial and residential driveways in this location. This location also includes three existing culverts; one 32-inch corrugated metal pipe, one 12-inch corrugated metal pipe (driveway) and one 42 x 29-inch corrugated metal pipe arch. Project changes made at Location 5 since the 2010 FEIR/EA are listed below.

- Change the length of a new left-hand turn lane from eastbound SR 152 to Watsonville Road from 550 feet to 275 feet long.
- Add a refuge area at the Watsonville Road intersection for motorists turning left onto eastbound SR 152 from Watsonville Road.
- The amount of right of way needed has increased to approximately 2 acres, which will be acquired from both sides of the road. The acquisition includes underground easements for soil nails, temporary construction easements and public utility easements. The original description called for acquiring 1.20 acres on the westbound side of the roadway only. The

increase includes acquisition of a business on the northwest corner of SR 152 and Watsonville Road.

- Modify the culverts under driveways to accommodate changes to the road. Extend the culvert that crosses Meritage Court to match the gutter flow on both sides. Extend the culvert that crosses SR 152 just east of Meritage Court and add rock slope protection at both ends. On the south side of SR 152, extend the existing side ditch with a trapezoidal side ditch with 4:1 slopes. In other areas, where the road is crowned to drain water, add a v-ditch on both sides of SR 152. Infiltration filters will be constructed in the gutter on both sides of the roadway to control heavy rainfall and treat storm water runoff.

4. AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES AND AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

This section corresponds to Chapter 2 in the FEIR/EA. The resources discussed here are included because they are affected by changes made to the project since the FEIR/EA was completed. The project's effects on other resources and the cumulative impacts discussed in the FEIR/EA have not changed. The analysis in the FEIR/EA remains valid. Please refer to Chapter 2 of the FEIR/EA for a description of regulatory settings for each resource discussed below.

4.1 PARKS AND RECREATIONAL FACILITIES

Please refer to Section 2.1.1.3 in the FEIR/EA for the original analysis. Because of changes to the project, a new Section 4(f) De Minimis Finding was also prepared to comply with NEPA. It is available at www.dot.ca.gov/dist4/envdocs.htm.

4.1.1 Affected Environment

Mount Madonna County Park (Park) is located adjacent to much of the northern side of the project area (see Location 4 map in Appendix A), and portions of the southern side of the project area. This park consists of 3,688 acres dominated by redwood forest characteristic of the Santa Cruz Mountain range. The park is under the jurisdiction of the Santa Clara County Parks and Recreation Department (County Parks), which administers the County's parks and recreation programs and operates and maintains 28 parks throughout the county.

Land from the Park would only be acquired for the project at Location 4. While County Parks owns the land on both sides of the highway at Location 4, the Park is only open to the public on the north side of SR 152.

Proposed construction activities at Location 4 include the construction of five soil nail retaining walls on westbound SR 152, which have changed in size, and the addition of one Type 5 retaining wall (L-shaped wall to support the roadway) on the eastbound side of SR 152. Please see Table 3-1 for a description of changes in the wall sizes.

4.1.2 Environmental Consequences

The amount of acquisition of park land has changed from 0.55 acre on the north side only to 2.6 acres of park land, taken as strips of land along both sides of the highway. In addition, 1.3 acres of underground easement for soil nails would be acquired. Approximately 344 trees will be

affected by the project on the westbound side of SR 152 and 80 trees on the eastbound, creek side of the park. Please see Table 4-7 for more details.

While parkland would be acquired, no park facilities or amenities would be taken by the project. Public use, access and enjoyment of the park would not be impaired by project activities.

4.1.3 Avoidance, Minimization, and/or Mitigation Measures

In addition to the visual measures described in Section 4.3.3, during coordination with the County Parks, the following measures were agreed upon to compensate for impacts to vegetation on the north side of SR 152 at Location 4:

- At Location 4, Caltrans will replace native trees at a ratio of 3 native trees planted for each removed tree that is 4 inches or greater in diameter at breast height. Caltrans will replace any non-native trees at a ratio of 1 native tree planted for each removed non-native tree that is 4 inches or greater in diameter at breast height.
- Caltrans will plant and re-establish native plant species in areas disturbed as a result of the project, including the forest understory and shrubs.
- Caltrans will fund, implement and monitor for a three- to five-year plant establishment period, or as determined by the California Department of Fish and Wildlife (CDFW), compensation for permanent impacts on the north side of SR 152 in the area of the Park open to the public.
- Caltrans will prepare a Mitigation, Monitoring and Reporting Plan (MMRP) that will include, at a minimum, success criteria to meet all goals and monitoring protocols specified by regulatory agencies and Caltrans relating to impacted species and habitat. Prior to preparing the MMRP, if the County agrees to a site on park land, Caltrans will consult with County Parks on an appropriate planting site and the plant palette and will provide County Parks with the final MMRP for their information prior to implementation.
- Caltrans will use best efforts to ensure that all plantings will be of native species locally collected or purchased from the local watershed and found within the immediate project site, if available, to maintain the genetic integrity of the natural communities within the park and project area and to prevent the importation of diseases and fungi. Mixes will be approximately 65 pounds/acre mixture rate (or agreed upon by the County). In addition, the contractor will be asked to save duff from the project area to reuse on the planting site if there is no concern that the duff may carry Sudden Oak Death.
- Caltrans will use best efforts to ensure that planting sites are located within the same watershed where trees and plant species were impacted or removed.
- Caltrans will implement Best Management Practices (BMPs) to prevent the spread of Sudden Oak Death as required by applicable state and federal laws.
- Caltrans will implement BMPs to prevent the spread of invasive plant species in the Park. The BMPs will comply with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from the Federal Highway Administration, as well as the Streambed Alteration Agreement with the CDFW.
- The project work and activities will be carried out and comply with the Streambed Alteration Agreement from the CDFW, the Biological Opinion from the U.S. Fish and Wildlife Service and the Section 404 Permit from the U.S. Army Corps of Engineers. Caltrans will provide County Parks with the final permits showing the avoidance, minimization and mitigation

measures agreed upon to protect habitat, threatened and endangered species, special-status animal species, wetlands and other waters of the U.S. and migratory birds within the Park.

4.2 FARMLANDS

Please refer to Section 2.1.2 in the FEIR/EA for the previous analysis and information on the laws and regulations that affect farmlands, as well as a description of the different types of farmland.

4.2.1 Affected Environment

Location 5 is the only portion of the project with farmland. Caltrans submitted a Farmland Conversion Impact Rating form to the National Resource Conservation Service (NRCS). The original consultation process with the NRCS was completed on March 9, 2010. It concluded that farmland required for the project was negligible, with a total score of 91 out of a possible 260, and that no mitigation was required. Consultation was reinitiated with the NRCS in 2012 and it was completed on June 21, 2012. With a score of 124 out of a possible 260, the farmland required for the project is still considered negligible.

As described in the FEIR/EA, only one parcel with a Williamson Act contract is located within the project area at Location 5. However, this parcel is also under non-renewal for the Williamson Act and will be completely out of the program by 2015.

4.2.2 Environmental Consequences

The amount of farmland being acquired for the project at Location 5 has changed from 1.20 acres to 1.22 acres. This land will be incorporated into the transportation facility and will no longer be used for agricultural production. This acquisition represents a narrow strip of farmland along the highway frontage and would not result in impacts that would preclude agricultural production on the remainder of the parcel or prevent access to the parcel.

The amount of Williamson Act land being acquired has been reduced from 4,445 square feet to 4,247 square feet or .1 acre.

4.2.3 Avoidance, Minimization, and/or Mitigation Measures

None required.

4.3 VISUAL/AESTHETICS

In 2009, the State Route 152 Safety Improvement Project Visual Impact Assessment (VIA) was approved. Because of changes to the project design, a Supplemental VIA was prepared in 2012 and approved in January 2013. The same methods were used in both the original and Supplemental VIA to assess visual changes. Information in this section is summarized from this supplemental assessment.

4.3.1 Affected Environment

The project is situated in Hecker Pass, an east-west oriented canyon paralleling the stream course of Bodfish Creek, in the southernmost portion of the Santa Cruz Mountain Range. The project area consists of two distinct landscape units: the Santa Cruz Mountains/Hecker Pass (containing

Locations 1, 2, 3 and 4) and the Santa Clara Valley (containing Location 5). Each landscape unit has a characteristic visual character, quality, and visual sensitivity.

Santa Cruz Mountains/Hecker Pass Landscape Unit
The Santa Cruz Mountains/Hecker Pass landscape unit extends from the western project limit to roughly 0.5 mile east of Blackhawk Canyon where Bodfish Creek diverges south from the highway and includes Locations 1, 2, 3 and 4. Along SR 152, this landscape unit is scenically highly intact with little evidence of disturbance and steep slopes containing native mixed evergreen woodland, particularly tall redwoods. The tall forest trees visually enclose the roadway and are the only visual image type seen by motorists on the roadway. Fleeting views of Bodfish Creek, which is parallel to, and south of the highway, are visible at various locations. The visual character, visual quality, and viewer conditions of the SR 152 corridor are similar throughout Locations 1, 2, 3, and 4.

The Santa Cruz Mountains/Hecker Pass landscape unit is sparsely developed. Viewers in this area consist primarily of motorists on SR 152. Principal off-road, non-motorist, viewers in proximity to the project include residents on Bella Vista Lane above and south of Location 1 at the western end of the project corridor, visitors to Mt. Madonna County Park at the main entrance near Location 1, and park visitors at the secondary entrance at Location 4.

Overall, the visual quality of this landscape unit is considered to be high. Viewer sensitivity from the roadway is considered to be high due to the recreational and scenery-focused orientation of most motorists on this section of SR 152. Viewer sensitivity toward the roadway is considered to be low due to the lack of viewer exposure to the roadway.

Santa Clara Valley Landscape Unit
The Santa Clara Valley landscape unit only includes Location 5. Although some surrounding land use in this landscape unit includes residential buildings, they are well screened from the roadway behind walls and landscaping. The overall visual scene is dominated by wooded riparian corridors of Bodfish Creek and its tributaries; undeveloped, wooded slopes of the Santa Cruz Mountain foothills at foreground and middle-ground distance; and the historical agricultural character of several surrounding wineries and associated vineyards. Walnut trees line both sides of SR 152 east of its intersection with Watsonville Road.

Location 5 is in a low-density, rural residential neighborhood and is thus visible to adjacent homes. Existing views to and from the road are generally well-screened by community walls, extensive tree screening, and other landscaping.

Overall, the visual quality of this landscape unit is considered to be moderately high. Viewer sensitivity from the roadway is also considered to be moderately high; this landscape unit is less recreation and scenery oriented than within the Santa Cruz Mountains/Hecker Pass landscape unit. Viewer sensitivity toward the project area by non-motorists is considered to be moderately high due to the moderate to high level of viewer exposure to the roadway.

4.3.2 Environmental Consequences
Visual quality is characterized and evaluated in terms of the descriptors *vividness*, *intactness*, and *unity*. Vividness refers to the striking and distinctive quality that makes a landscape powerful and

memorable; intactness is the visual integrity of the landscape and its freedom from encroaching elements; unity is the visual coherence and compositional harmony of a landscape. Visual impacts are identified as a combination of the degree of project-related change to visual character and quality (*the visual resource*), and *viewer response* or overall sensitivity and exposure to visual change.

Visually significant features of the proposed project would include the retaining walls and associated features. The proposed roadway widening would have minor visual effects, as discussed by location below.

Please note that wall heights and lengths are approximate, and that final heights and lengths will be determined during final design. Minor revisions in both final wall height and length are not anticipated to result in significant differences in the final overall visual impact determination.

4.3.2.1 Location 1

Before and after visual simulations of the proposed upslope Retaining Wall (RW) 1 at Location 1 are shown in Figures 3, 4 and 5 below. Figure 3 shows the existing condition. Figure 4 shows the simulated condition immediately following construction. Figure 5 shows the simulated condition 10 to 15 years following construction, with anticipated re-vegetation along the top of the wall. Simulations for subsequent locations show the condition 10 to 15 years following construction.

Views from the Road

Changes to the project at Location 1 are summarized in the following table:

Table 4-1: Location 1 Visual Changes to Retaining Walls

Original Retaining Wall Name	New Retaining Wall Name	ORIGINAL Maximum Height (feet)	NEW Maximum Height (feet)	ORIGINAL Length (feet)	NEW Length (feet)
1A	RW 1	17.2	13.4	256.8	220
1B	RW 2	19.2	14.7	207.1	221

As suggested by the table and shown in the simulations, anticipated project impacts under the proposed modified project are substantially the same as described in the original FEIR/EA. Overall wall length and wall heights at Location 1 would decrease slightly from the original proposal. As under the original project, impacts from the roadway with the proposed modifications would include strong contrast with the existing landscape character and a strong decline in vividness, intactness, and unity due to the highly prominent visual intrusion of the new retaining walls and accompanying vegetation removal. Approximately 0.5 acre of additional right-of-way on both sides of the roadway would be acquired under the modified project. The original description called for acquiring approximately 0.12 acre on the northern side of the roadway only. Roadway widening and wall construction could require removal or possible root damage of approximately 67 mature trees, including bay laurel, maple, and redwood trees. The resulting loss of tree canopy from the additional acquisition would proportionately increase the amount of tree and vegetation loss at the roadside.

Figure 3: Existing westbound view facing location of proposed RW 1 at Location 1

Figure 4: Simulated westbound view showing proposed RW 1 at Location 1 immediately following construction

Figure 5: Simulated westbound view showing proposed RW 1 at Location 1 10-15 years after construction

This would represent a moderate decline in vividness in this road segment, whose visual character would nevertheless remain dominated by remaining forest canopy and views of wooded hillsides. In the previous design, yellow plastic crash cushions were proposed at the ends of walls. The modified upslope retaining walls at all locations, including Location 1, now incorporate end treatments to prevent auto collisions with the walls. The end treatment would consist of driving the wall and associated concrete safety barrier (at the bottom of all upslope walls) into the hillside. The walls' staining and aesthetic treatment would blend the wall into the hillside and reduce the artificial character. The concrete safety barrier would be colored the predominant color of the wall to further reduce glare, contrast and the possibility of graffiti, in addition to decreasing visual impacts. Nevertheless, moderately strong declines in both intactness and unity would result from the prominent concrete walls and barriers along the roadway shoulder.

In the context of high viewer sensitivity and high visual exposure throughout Landscape Unit 1, this would, overall, represent a high level of adverse change and a substantial adverse impact. The retaining walls would incorporate context-sensitive color and texture treatment to reduce potential impacts. A sculpted rock wall texture treatment is depicted in the visual simulations; however the final selection of texture will be made in consultation with local agencies. Whatever the selected texture, the intent of the treatment is to reduce overall wall contrast, incompatibility of character, and resulting decline in visual quality to the extent feasible.

Non-motorist views toward the project area

Effects on views to the project from off-road viewpoints would not change as a result of the project modifications. Despite the proximity of several homes on nearby Bella Vista Lane in the area south of Location 1, no views of the proposed project area from these off-site locations are

evident due to dense intervening forest. Potential impacts to these viewers would thus be negligible.

Similarly, views from Pole Line Road, representing the main visitor entrance into Mt. Madonna County Park, would be entirely blocked by intervening forest and terrain. Park visitors would have views of the project area, but only as motorists passing by Location 1. Once on Pole Line Road, or elsewhere within the park, the proposed project area would not be visible. Potential impacts to visitors within the park would thus be negligible.

4.3.2.2 Location 2

Before and after visual simulations of proposed upslope Retaining Wall (RW) 3 at Location 2 are shown in Figures 6 and 7.

Proposed changes to the project at Location 2 are summarized in the following table:

Table 4-2: Location 2 Visual Changes to Retaining Walls

Original Retaining Wall Name	New Retaining Wall Name	ORIGINAL Maximum Height (feet)	NEW Maximum Height (feet)	ORIGINAL Length (feet)	NEW Length (feet)
2A	RW 3	29	32.6	430.6	566

<u>Views from the Road</u>

As suggested by the table and shown in the simulations, anticipated project impacts under the proposed modified project are similar to those described in the original VIA, but increased in both maximum height and overall length. Maximum height would increase from 29 feet originally, to 32.6 feet. Overall wall length would increase from 430.6 feet to 566 feet. While these changes would represent a moderate increase in both prominence and duration of view of the new wall, impacts were previously identified as substantially adverse, and this conclusion would also apply to the modified wall. As under the original project, anticipated project impacts from the roadway would include strong contrast with the existing landscape character, resulting in a moderate decline in vividness, and strong declines in intactness and unity due to highly prominent visual intrusion of the new retaining wall, and accompanying vegetation removal. Approximately 0.9 acre of additional right-of-way on both sides of the roadway will be acquired, with associated tree and vegetation removal. The original description called for acquiring approximately 0.05 acre on the northern side of the roadway only. Roadway widening and wall construction could require removal or possible root damage of approximately 71 mature trees, including bay laurel, maple, oak, redwood and toyon trees. As at Location 1, the modified retaining walls would incorporate end treatments to prevent auto collisions with the walls. These would be stained to blend into the texture treatment of the adjoining walls. No crash cushions were proposed at this location under the original project. The staining of end treatments would minimize their artificial character.

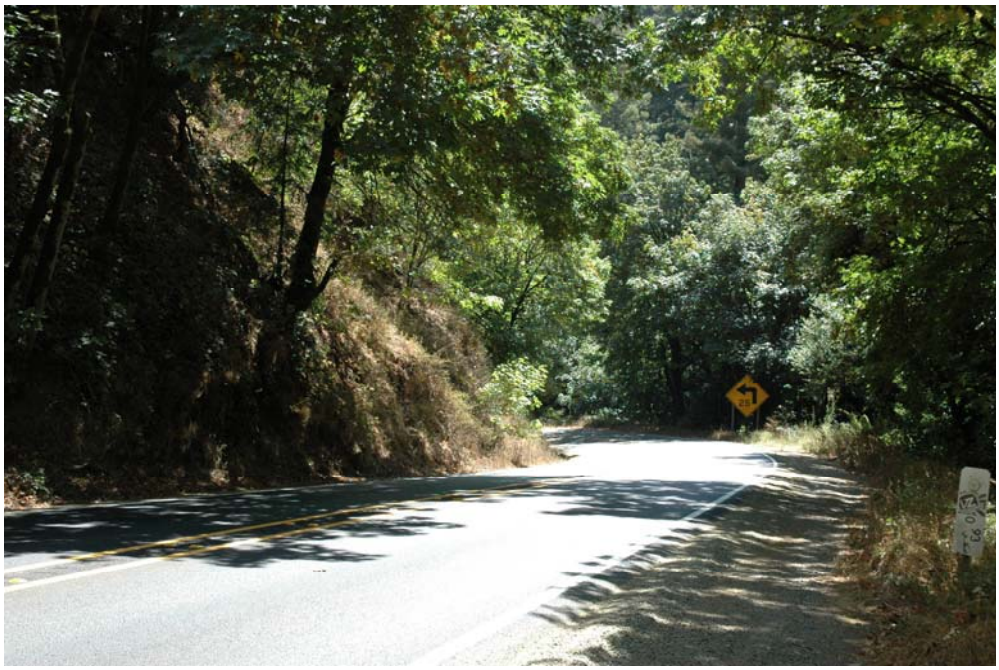

Figure 6: Existing eastbound view facing location of proposed RW 3 at Location 2

Figure 7: Simulated eastbound view showing proposed RW 3 at Location 2 10-15 years after construction

The retaining walls would incorporate context-sensitive color and texture treatment to reduce potential impacts. A sculpted rock wall texture treatment is depicted in the visual simulations; however, the final selection of texture will be made in consultation with local agencies. Nevertheless, the overall decline in visual quality and in this road segment would remain strong. Concrete safety-shape barriers in front of retaining walls will be colored to blend in with the walls. The coloring would reduce glare and reduce the likelihood of graffiti.

In the context of high viewer sensitivity and high visual exposure, this would represent a high level of adverse change and a substantial adverse impact.

Non-motorist views toward the project area

Effects on views to the project from off-road viewpoints would not change as a result of the project modifications. Viewers in proximity to Location 2 include one or more properties on Bella Vista Road and Sanders Road overlooking the highway from the southwest at distances of under one-quarter-mile. However, as discussed for Location 1, views from all of the properties in this area would be largely or completely screened by dense intervening forest. Actual exposure to the proposed project area from these properties is thus negligible. Similarly, Location 2 would not be visible from within Mt. Madonna County Park. Adverse impacts on off-site views to the road are thus not anticipated at Location 2.

4.3.2.3 Location 3

Before and after visual simulations of the proposed upslope Retaining Wall (RW) 4 at Location 3 are shown in Figures 8 and 9 below. Proposed changes to the project at Location 3 are summarized in the following table:

Table 4-3: Location 3 Visual Changes to Retaining Walls

Original Retaining Wall Name	New Retaining Wall Name	ORIGINAL Maximum Height (feet)	NEW Maximum Height (feet)	ORIGINAL Length (feet)	NEW Length (feet)
3A	RW 4	11.2	14.1	167.9	272
3B	Combined with RW 4	10.2	Combined with RW 4	207.8	Combined with RW 4
3C	RW 6	5.2	Removed	125	Removed

Views from the Road

As suggested by the table, anticipated project impacts from the roadway would decrease substantially at Location 3. Where formerly three walls with an overall length of 500.7 feet were proposed, under the modified project these would be replaced by a single 272-foot-long wall. Maximum wall height would increase slightly, from 11.2 feet to 14 feet. This increase in height would be relatively subtle. In contrast, the wall length and duration of visual exposure for motorists would decrease substantially.

Although the proposed RW 4 would have strong contrast with the existing landscape character, the shorter height when compared to Location 2, and the reduced overall length compared to both Locations 1 and 2 would result in a moderate decline in vividness due to tree removal, and moderate declines in intactness and unity due to moderate and brief visual intrusion of the new retaining walls. Concrete safety-shape barriers in front of retaining walls will be colored to blend in with the walls. The coloring would reduce glare and reduce the likelihood of

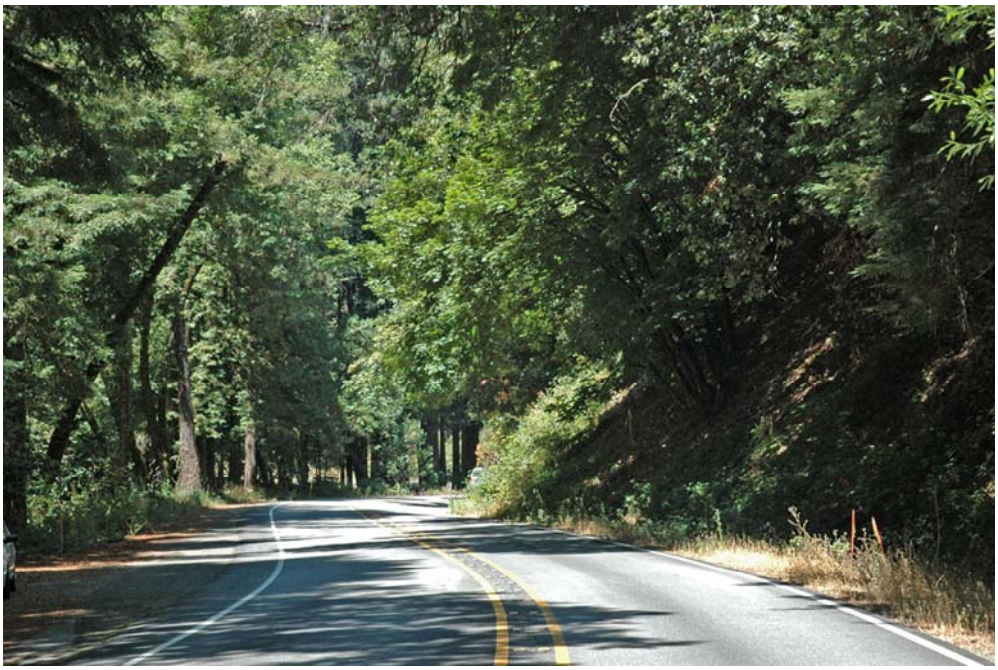

Figure 8: Existing westbound view facing location of proposed RW 4 at Location 3

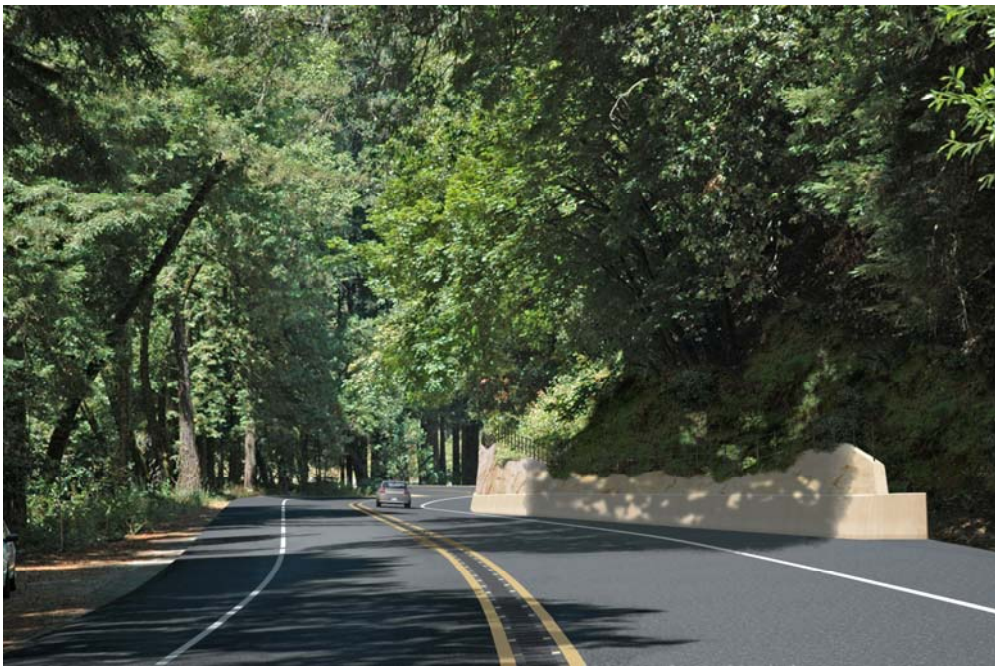

Figure 9: Simulated westbound view showing proposed RW 4 at Location 3 10-15 years after construction

graffiti. Roadway realignment and wall construction could require removal or possible root damage of approximately 65 mature trees, including bay laurel, maple, oak, redwood and toyon trees. Approximately 1 acre of additional right-of-way on both sides of the roadway would be acquired. The original description called for acquiring approximately 0.07 acre on the northern side of the roadway only. The visual setting would, however, remain dominated by existing tree canopies near the shoulders, as well as in the mid-ground distance, where attractive views of forested hillsides divert eastbound motorists' attention from the immediate highway shoulder. The retaining walls would incorporate context-sensitive color and texture treatment to reduce potential impacts. Overall, the decline in visual quality and in this road segment would be moderate.

As in the previous locations in the Santa Cruz Mountains, viewer sensitivity is high. However, visual exposure would be moderate due to the shorter duration of exposure compared to other locations, and overall viewer response would be moderately high. By itself, the impacts of this wall are considered adverse, but moderate and less than significant.

Non-motorist views toward the project area

Location 3, which is immediately east of Location 2, is within foreground distance of the same residences on Bella Vista Lane and Sanders Road discussed above under Location 2. The same conditions apply as well: the project would be largely or completely screened by existing forest from these properties. Visual exposure to project features at Location 3 is thus negligible. Location 3 is not visible from within Mt. Madonna County Park. Adverse impacts on off-site views to the road are thus not anticipated at Location 3.

The private driveways at Location 3 would be graded to conform to the new alignment of the roadway. With completion of construction, the resulting visual changes would be negligible.

4.3.2.4 Location 4

Before and after visual simulations of the proposed upslope Retaining Wall (RW) 9 at Location 4 are shown in Figures 10 and 11 (eastbound); and 12 and 13 (westbound). A simulation of proposed upslope RW 10 (westbound) is shown in Figures 14 and 15.

Proposed changes to the project at Location 4 are summarized in the following table:

Table 4-4: Location 4 Visual Changes to Retaining Walls

Original Retaining Wall Name	New Retaining Wall Name	ORIGINAL Maximum Height (feet)	NEW Maximum Height (feet)	ORIGINAL Length (feet)	NEW Length (feet)
4A	**RW 7**	31.2	31.8	292.5	315
4B	**RW 8**	14.2	10.5	57.3	70
4C	**RW 9**	32.2	30.4	1056.1	1037
4D	**RW 10**	23.2	19.3	584.1	568
4E	(No name) (downslope)	5	Removed	205	Removed
4F	**RW 11**	12	10.6	345	380
NA	**RW 166** (Downslope)	NA	8	NA	170

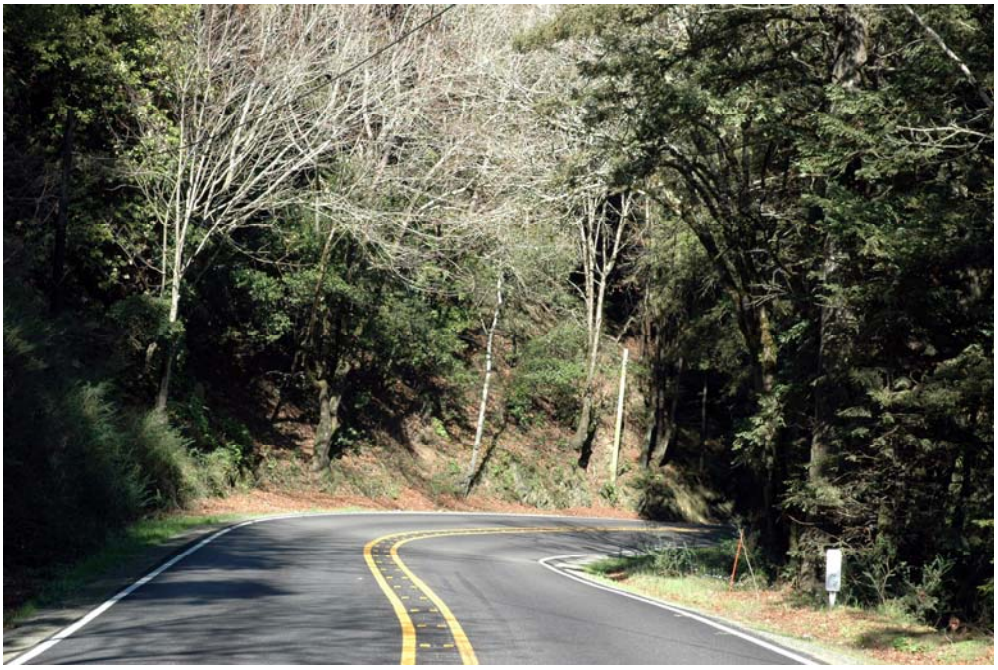

Figure 10: Existing eastbound view facing location of proposed RW 9 at Location 4

Figure 11: Simulated eastbound view showing proposed RW 9 at Location 4 10-15 years after construction

Figure 12: Existing westbound view facing location of proposed RW 9 at Location 4

Figure 13: Simulated westbound view showing proposed RW 9 at Location 4, 10-15 years after construction

Figure 14: Existing westbound view facing location of proposed RW 10 at Location 4

Figure 15: Simulated westbound view showing proposed RW 10 at Location 4, 10-15 years after construction

Views from the Road

As suggested by the table, the difference between the original project description and the proposed modifications to walls at Location 4 are minor and would be visually insignificant. The overall affected road segment is approximately 0.63 mile (3,326 feet), and the combined wall length is 0.45 mile (2,370 feet). As under the original project, anticipated project impacts at Location 4 would include strong contrast with the existing landscape character, resulting in a moderate decline in vividness due to tree removal, and strong declines in intactness and unity due to highly prominent visual intrusion of the new retaining walls. The retaining walls would incorporate context-sensitive color and texture treatment to reduce potential impacts. Similarly, concrete safety-shape barriers in front of retaining walls would be colored to blend in with the walls. The coloring would reduce glare and reduce the likelihood of graffiti. Nevertheless, the overall decline in visual quality in this road segment would remain high.

In addition to the upslope walls described above, a newly proposed downslope retaining wall (RW No. 166) would be located directly across the road from upslope RW 11. A concrete safety shape barrier would be located at road level atop the new RW 166, with the ends of the barrier protected by 75 feet of metal beam guard rail (MBGR) at each end. The barriers would be colored to blend with other retaining walls, reducing glare, contrast, and susceptibility to graffiti. MBGR would be treated to develop an oxidized reddish-brown finish, blending with the setting and minimizing contrast and glare. The visual effect of the new wall would be limited to this visible length of safety barrier at the shoulder, and would be minor.

The primary visual difference between the original project and modified project would be in the amount of tree and vegetation removal that would occur. Roadway realignment and wall construction could require removal or possible root damage of approximately 112 mature trees, including bay laurel, maple, madrone, oak, redwood and toyon trees. Approximately 4 acres of additional right-of-way on both sides of the roadway would be acquired under the modified project. The original description called for acquiring approximately 0.55 acre on the northern side of the roadway only. An estimated 424 trees would be removed within the proposed new project right-of-way. This tree removal, however, would be limited to the area within 5 feet of the top of the retaining walls. Beyond that distance, dense existing forest canopy would remain.

As under the original project description, overall decline in visual quality at Location 4 would be high. In the context of high viewer sensitivity and high visual exposure, this would represent a high level of adverse change and a substantial adverse impact.

Non-motorist views toward the project area

Views to the road within this road segment are very limited. Potential views from within Mt. Madonna County Park and the vicinity of the park entrance to proposed upslope walls are almost entirely blocked by intervening topography. Despite anticipated tree removal at the roadside within the project right-of-way, visual effects to users within the park would be negligible. A previously proposed downslope retaining wall (4E) near the park entrance at Sprig Recreation Area has been eliminated from the project. At the Mt. Madonna County Park entrance, trees along the highway would be removed; however, large trees and other vegetation on the park (north) side of the creek would remain, maintaining screening. In the context of high viewer sensitivity, these minor declines in visual quality as seen from within the park would not be substantial.

The principal visual impact of the proposed project to park visitors at this location would thus be experienced by motorists approaching the park entrance in views from the road, as described above. Outside of the views of park visitors within the Sprig Recreation Area parking lot, no other off-road viewers are present in the viewshed of Location 4, either within or outside of Mt. Madonna County Park.

4.3.2.5 Location 5

Figure 16 depicts existing conditions and features to be removed under the proposed action at Location 5. A before and after visual simulation of proposed actions at Location 5 are shown in Figures 17 and 18 below.

Views from the Road

The principal project actions at Location 5 include minor roadway widening, addition of a turn lane at the intersection of Watsonville Road, creation of standard 8-foot shoulders, along with related asphalt dikes and other drainage features.

However, the principal visual effect at this location would be the removal or root damage of roughly 223 trees within the proposed right-of-way. Approximately 2 acres of right-of-way on both sides of the roadway would be acquired. The original description called for acquiring approximately 1.20 acres on the northern side of the roadway only. The increase includes acquisition of a business on the northwest corner of SR 152 and Watsonville Road, depicted in Figure 16. As shown in Figure 16, a large number of mature trees line the highway in this segment, particularly in the large (approximately 80 feet wide) landscaped setback area south of the highway and east of Watsonville Boulevard, contributing substantial vividness to this length of the highway. However, the project right-of-way in this section would extend 35 feet or less from the edge of shoulder, leaving virtually all of the large-scale existing trees in the setback area intact. Only those trees located very close to the existing shoulder would be removed. These include about 20 mature walnut trees at the highway shoulder in the southeastern quadrant of the intersection of SR 152 and Watsonville Road at the Roffinella/Thomas Kruse Winery, and up to 10 similar walnut trees in the northeastern quadrant of the intersection, identified for removal under the original project proposal. The two groups of trees form a remnant of an allee (double row of trees) lining the highway east of the intersection with Watsonville Road. In addition, a large number of young, smaller trees, mostly comprising more recently planted hedgerows at the edge of the roadway, would be removed for road widening at the Fortino and Hecker Pass Winery frontages, and at the road shoulder in the landscaped setback area southwest of Watsonville Boulevard. Up to three rows of vines at the Roffinella Winery may be removed to widen the roadway. This small loss of vines would likely be unnoticed by motorists.

From the perspective of motorists, this removal of smaller stature trees at the roadside would represent a moderate decline in vividness, but would not substantially alter the overall visual quality of the viewshed in this location, which would remain intact, rural in character, and moderately high in visual quality. For motorists, open views of the surrounding rural setting and views of wooded mountains in the background provide the focus of attention and retain a high level of visual quality. In addition, the large trees dominating the landscaped setback southwest of Watsonville Road would remain, retaining their role as vivid defining features of the immediate foreground in this segment. From the perspective of motorists, this minor decline in visual quality from roadside tree removal would be an adverse, but not substantial impact.

Allee of walnut trees to be removed, Roffinella Winery, looking west.

Roadside hedgerows to be removed, Fortino Winery looking west.

Landscaped setback area southwest of Watsonville Boulevard intersection, looking west. The large trees depicted would be unaffected by proposed widening.

Building to be removed at intersection of Watsonville Boulevard, looking east.

Figure 16: Existing views of Location 5

Figure 17: Existing westbound view facing Roffinella Winery at Location 5

Figure 18: Simulated westbound view facing Roffinella Winery at Location 5

Widening at Location 5 would also require removal of one existing building, depicted in Figure 16. This small commercial building lacks special architectural or historic distinction, and its removal would not represent an adverse visual impact.

Non-motorist views toward the project area

From the perspective of adjoining properties, including the Roffinella, Fortino and Hecker Pass Wineries and nearby residences, the loss of roadside trees would be a much more pronounced effect. The trees to be removed at the highway shoulder primarily comprise hedgerow plantings whose main purpose is evidently to provide screening and isolation from the highway for the affected properties. All three wineries are visitor destinations for which scenic quality is of importance, and one, the Roffinella/Thomas Kruse Winery, was found to be eligible for the California Register of Historical Resources on the local level and is a designated Santa Clara County landmark. Therefore, viewer sensitivity and overall viewer response at Location 5 is considered high. Although the majority of nearby residences, located southwest of the Watsonville Boulevard intersection, are well-isolated from the roadway by a community wall, substantial setback area, and landscaping, residences adjoining the highway near the project's southeastern terminus are not so isolated and would be more directly exposed to the proposed tree removals on their properties. These residences would also have high viewer sensitivity, exposure and response.

The proposed removal of the 223 trees in Location 5 would thus have a strong adverse effect on visual quality of the affected properties, exposing them directly to the highway with a corresponding decline in vividness, intactness and unity of their visual setting. In the context of their high viewer sensitivity and response, this strong decline in visual quality would represent an adverse impact. However, the proposed changes to the project would not alter the overall impact conclusion of the original VIA for this location, which identified significant impacts that could not be avoided, minimized, or mitigated below a level of significance.

Light and Glare

No substantial long-term light or glare impacts would occur as a result of the proposed project. Construction at night could result in glare impacts that interfere with safe navigation by motorists. Walls would be treated to have low reflectivity and subdued earth-tone colors.

Construction Impacts

Construction staging within the highway corridor would be visible from the highway and would cause temporary impacts due to the presence of materials and equipment. Construction activities would have temporary impacts that would be visible to motorists, such as placement of safety barriers and signs, vegetation removal, slope grading, and temporary soil and rock exposure. In the worst case, such impacts would have the potential to be substantially adverse.

4.3.3 Avoidance, Minimization, and/or Mitigation Measures

Avoidance, minimization, and mitigation measures are described by project location below:

Locations 1, 2, 3 and 4

To address the potential impacts of tree removal at these locations, the following tree replacement and revegetation measures would be implemented:

- Minimizing existing tree and vegetation removal to the greatest possible extent. The limit of work will be kept to the minimum possible footprint, not to exceed 5 feet from the edge of the retaining wall. Priority will be placed on preserving existing trees nearest the wall, in order to preserve views of the forest edge from the road to the greatest extent feasible.

- Tree replacement planting will be implemented if appropriate to mitigate for major loss of tree canopy, as determined by the project landscape architect.

To address the potential impacts of visual intrusion from the new retaining walls, the following mitigation measures would be implemented:

- Minimizing overall wall height to the greatest extent feasible.

- Using context-sensitive wall texture and color treatment, in consultation with local agencies to reduce visual contrast and enhance compatibility of visual character to the greatest extent feasible.

- Staining of the concrete safety-barrier attached to retaining walls to reduce overall color contrast and visual intrusion.

- If feasible, walls will be gutterless in order to reduce visual contrast and mass.

- Wherever feasible and consistent with safety, the use of plastic collapsible crash cushions at retaining walls will be avoided to reduce the visual contrast with the natural environment.

Location 5

- Replacement of existing tree screening to be removed at Location 5 has been determined to be infeasible within Caltrans right-of-way. Therefore, property owners will be compensated for the loss of trees.

Light and Glare

- Construction activities will limit all construction lighting to within the area of work and avoid light trespass through directional lighting, shielding, and other measures as needed.

Construction impacts

- Unsightly material and equipment storage and staging will be screened to the extent feasible to minimize visibility from the roadway and nearby sensitive off-road receptors, such as homes or vineyards.

- Construction activities will be phased to minimize the duration of disturbance to the shortest feasible time.

- All vegetated areas disturbed by construction, staging, and storage will be treated with appropriate erosion control measures and revegetated.

4.4 CULTURAL RESOURCES

4.4.1 Affected Environment

In September 2012, an Addendum was approved to the 2009 Historic Property Survey Report and Archaeological Survey Report. The Addendum addresses changes in project elements and the project footprint. The archaeological and architectural Areas of Potential Effect (APE) were also expanded to account for the larger footprint, as well as construction staging and traffic handling.

Archaeological Resources

The 2009 archival and archaeological field investigation did not identify any recorded or unrecorded archaeological resources. Because the previous records searches covered the expanded APE, no new records searches were undertaken. However, all the additions to the APE were investigated in the field.

During field investigations, one archaeological resource, an historic-era logging site, was identified in the expanded APE. This resource is located outside of the construction footprint, but within the boundaries of an area that will temporarily be used to control traffic during construction.

Proposed ground-disturbing activities will primarily occur within previously disturbed soil or fill, or within terrain that would have severely limited prehistoric or historic land use. There is a low potential for encountering buried archaeological resources.

Historic Properties

In 2009, one historic resource, the Thomas Kruise (Rofinella) Winery at 4390 Hecker Pass Road, was identified as a designated Santa Clara County Landmark. This property was found to be eligible under Criteria 1 of the California Register of Historical Resources on the local level for its representation of an early winery developed by Italian immigrants. It is, therefore, considered an historic property for the purpose of compliance with CEQA. In 2009, Caltrans determined a "finding of no impact" to the property.

4.4.2 Environmental Consequences

Archaeological Resources

The project will have no impact on the historic-era logging site because it will be protected by the avoidance measure described under Avoidance, Minimization and Mitigation Measures in Section 4.4.3 below.

Historic Properties

The Rofinella Winery was reassessed for potential impacts in the 2012 Addendum to the Historic Property Survey Report. Based on the addendum, Caltrans has determined a "finding of no substantial adverse change." The project will acquire some of the property's highway frontage, which will involve removing up to three rows of grape vines out of the existing 37 rows or 8 percent of the vines. A total of 4,087 square feet will be acquired for the project, which is 3.75% of the existing 2.5-acre property. Removal of the vines will not alter the historical resource such

that the significance of the resource will be impaired according to CEQA guidelines. Measures are described below to protect the remaining vines from any potential damage.

4.4.3 Avoidance, Minimization, and/or Mitigation Measures

The first two measures below have been added since the FEIR/EA:

- Before the start of work, the Project Archaeologist will set up the Environmentally Sensitive Area (ESA) to protect the archaeological resource. No project-related activities may occur within the ESA.
- Before the start of work, the Project Architectural Historian will delineate the ESA location for the historic winery. The ESA will be located on the proposed new right-of-way line between the rows of vineyards that will be removed and those that are remaining. No project actives may occur on the side of the ESA within the remaining vines.
- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission, who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District 4 Office of Cultural Resources Studies so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

4.5 BIOLOGICAL RESOURCES

The following sections are summarized from the Supplemental Natural Environment Study (Caltrans 2013) approved on March 27, 2013 and the Natural Environment Study (Caltrans 2009), approved on January 21, 2010. The temporary and permanent impacts to biological resources reported below have been revised since the 2010 FEIR/EA.

4.5.1 NATURAL COMMUNITIES

Habitat areas that have been designated as critical habitat under the federal Endangered Species Act are discussed in Section 4.5.4, Threatened and Endangered Species. Wetlands and other waters are discussed in Section 4.5.2.

4.5.1.1 Affected Environment

Section 2.3.1 of the FEIR/EA describes the natural communities in the project area.

Trees

In the FEIR, 148 trees were reported in the project footprint with a diameter at breast height (dbh) in excess of six inches. Since then, the California Department of Fish and Wildlife (CDFW), formerly known as the California Department of Fish and Game, requires that trees with a dbh of four inches or greater be counted. The smaller diameter and two years of growth, along with an increase in the construction area, contributed to a higher tree count in 2012. There are now 850 trees that will either be removed or that could be affected by root damage. A list of tree species at each location is provided in Table 4-6.

4.5.1.2 Environmental Consequences

Vegetation Communities

Table 4-5 lists the revised potential temporary and permanent impacts to vegetation communities resulting from roadway construction. Temporary impacts to habitat are those that can be restored and revegetated after construction is completed. Permanent impacts to habitat include those areas lost due to circumstances such as the increased paved surface that will remain after construction is complete. Species- or habitat-specific measures are discussed in the sections that follow.

Table 4-5: Areas of Temporary & Permanent Impacts to Vegetation Communities in the Project Footprint

Vegetation Community	Project Area Location [Impacts Acreage]					Total Area Acres
	1	2	3	4	5	
Temporary Impacts						
Coastal Live Oak Forest	–	–	–	.51	–	.51
Coyote Brush Scrub	–	–	.08		–	.08
Purple Needlegrass/Native Grassland	–	–	–	.02	–	.02
Redwood Forest	.40	.49	1.11	2.73	–	4.73
Landscaped/Agricultural Lands	–	–	–	–	2.07	2.07
Developed	–	–	–	–	.18	.18
Roadway/Paved/Shoulder	.01	.07	.02	.19	.13	.42
Total Temporary Impacts						**8.01**
Permanent Impacts						
Coastal Live Oak Forest	–	–	–	.55	–	.55
Coyote Brush Scrub	–	–	.03	–	–	.03
Purple Needlegrass/Native Grassland	–	–	–	.02	–	.02
Redwood Forest	.42	.34	.63	1.33	–	2.72
Landscaped/Agricultural Lands	–	–	–	–	2.25	2.25
Developed	–	–	–	–	.18	.18
Roadway/Paved/Shoulder	.09	.29	.32	.39	.11	1.19
Total Permanent Impacts						**6.94**
					Total Impact	**14.95**

Trees

Biological surveys indicate that approximately 850 trees could be affected by the project, as shown in Table 4-6 below. This is a conservative estimate, taking into account not just trees that

Table 4-6: Estimated Number of Affected Trees by Species

Tree Species	Total Affected Trees By Location									Total Affected Trees within the Project Footprint	
	1 (Riparian)	1 (Non-riparian)	2 (Riparian)	2 (Non-riparian)	3 (Riparian)	3 (Non-riparian)	4 (Riparian)	4 (Non-riparian)	5*		
Bay Laurel	3	2	0	4	5	0	9	24	0		47
Cedar									1		1
Madrone	0	0	0	0	0	0	0	3	0		3
Maple	1	12	35	18	7	8	31	65	0		177
Oak	0	0	0	8	2	1	14	104	167		296
Olive	0	0	0	0	0	0	0	0	4		4
Pine	0	0	0	0	0	0	0	0	2		2
Redwood	5	44	0	4	19	19	26	63	11		191
Toyon	0	0	0	1	0	4	0	6	0		11
Walnut (English)	0	0	0	0	0	0	0	0	32		32
Unknown Ornamental	0	0	0	1	0	0	0	79	6		86
Total Affected Trees per Location	9	58	35	36	33	32	80	344	223	Total Affected Trees within the Project Footprint	850

***There is no riparian habitat at Location 5.**

are proposed for removal, but also those trees that may not survive because of root damage. Wherever possible, trees will be trimmed rather than removed.

Additionally, in 2009, all impacted trees with a diameter at breast height (DBH) of 6 inches or greater were counted. For 2012, the requirement from CDFW is that all impacted trees with a 4-inch dbh or greater be counted for mitigation. Vegetation removal quantities between the original project and the revised project are thus not directly comparable.

The trees shown in the riparian columns in Table 4-6 fall under the jurisdiction of CDFW. Of the approximately 850 trees, an estimated total of 157 trees are in riparian areas at Locations 1 through 4.

4.5.1.3 Avoidance, Minimization and/or Mitigation Measures

Vegetation Communities
General avoidance and minimization efforts were incorporated into the design to reduce potential impacts to natural communities and plant and animal species. These measures include minimizing the project footprint, providing environmental education for the construction crew, and delineating the work area and all environmentally sensitive areas with fencing. These require that an onsite biological monitor be present during activities that may impact sensitive biological resources.

Trees & Riparian Habitat

- Caltrans proposes to mitigate for permanent losses of riparian redwood forest habitat at a 3:1 ratio through a conservation easement. Caltrans anticipates there to be approximately 3.37 acres of permanent impacts to riparian redwood habitat resulting in an easement of about 10 acres.
- Native trees outside of the riparian area with a dbh of four inches or greater will be replaced at a ratio of 3:1. All non-native trees with a dbh of four inches or greater not located in riparian habitat will be replaced at a 1:1 ratio.
- To the extent practicable, the root masses of removed trees and shrubs will be left in place. Disturbance or removal of vegetation will not exceed the minimum necessary to complete construction.
- All slopes or unpaved areas affected by the proposed project will be reseeded with native grasses and shrubs to stabilize the slopes and bare ground against erosion. Following construction, native plant species will be installed at the disturbed area(s).

4.5.2 WETLANDS AND OTHER WATERS

The 2009 Natural Environment Study described water features that were delineated in February 2008. The numbers, types, and locations of these water features (including culverts, other waters, and wetlands) was verified by the USACE in November 2009. A Jurisdictional Wetland Delineation for this project was approved by the U.S. Army Corps of Engineers (USACE) on December 28, 2009. In November 2012, USACE requested changes to the verified delineation maps, which are included in the Supplemental Natural Environment Study.

4.5.2.1 Affected Environment

The wetland delineation for the project identified 25 other water features within the project footprint that have the potential to be impacted. These features include potentially jurisdictional other waters of the U.S. (OWUS) and other waters that are potentially non-jurisdictional (OWUSNJ). These non-jurisdictional waters of the U.S. are considered waters of the State of California. No wetlands were identified within the project footprint. The project footprint contains 15 OWUS features and 10 OWUSNJ features that have the potential to be temporarily or permanently impacted by the proposed project.

The wetland delineation for the project identified 22 culverts in the project footprint. Each of these culverts is associated with an "other water" feature that conveys water in a channel. Sixteen of the 22 culverts identified during the delineation are scheduled for some type of repair, modification, extension or replacement under the proposed project. Eleven of the potentially impacted culverts were determined to convey OWUS and are therefore jurisdictional for the USACE, while the remaining five potentially impacted culverts were determined to be non-jurisdictional. These five non-jurisdictional culverts are considered waters of the State of California. The remaining six culverts in the project footprint are not expected to be impacted by the project, because they are all located under the existing roadway of SR 152.

4.5.2.2 Environmental Consequences

Construction activities will result in permanent impacts to approximately 4,576 square feet (0.11 acre) of other waters, including: 3,843 square feet (0.09 acre) of OWUS, and 733 square feet (0.02 acre) of waters of the State.

Construction activities will result in temporary impacts to approximately 3,194 square feet (0.07 acre) of other waters, including 2,525 square feet (0.058 acre) of OWUS and 669 square feet (0.015 acre) of waters of the State. Repairs to culverts within the project footprint will result in temporary impacts to approximately 264 square feet (0.006 acre) of culverted waters of the U.S.

To the extent practicable, all temporary impacts will be restored to preconstruction condition. No wetlands will be impacted.

4.5.2.3 Avoidance, Minimization and/or Mitigation Measures

In addition to the measures below, the measures to protect steelhead described in Section 4.5.4.3 will also protect Other Waters.

- Caltrans will limit construction activities to the smallest area possible to complete the work in an effort to minimize impacts to the existing riverine habitat in Bodfish Creek. A Caltrans-approved biologist will clearly delineate this limited construction area for incorporation in the project plans and specifications. The perimeter of the work site will be adequately fenced using high visibility Environmentally Sensitive Area (ESA) fencing to prevent damage to adjacent riparian habitat. No construction activities, within the riparian zone, will be allowed within the habitat protected by ESA fencing.
- Caltrans will use erosion control measures throughout all phases of operation where sediment runoff from exposed slopes threatens to enter waterways. At no time will silt-laden runoff be allowed to enter the stream or directed to where it may enter the stream. Erosion control installations will be monitored for effectiveness and repaired or replaced as recommended by

a Water Quality Monitor. As needed to prevent erosion, Caltrans will use soil stabilizers such as hydroseeding, netting, erosion control mats, mulch, fiber rolls, silt fences, check dams and devices to slow the velocity of runoff. Materials containing monofilament or plastic will not be used. The contractor will stabilize and equip construction site entrances and exits with tire washing capability. No discharge of pollutants from vehicle and equipment cleaning is allowed in any storm drains or water courses.

- Concrete will be excluded from surface water for a period of 30 days after it is poured/ sprayed. During that time the concrete will be kept moist, and runoff from the concrete will not be allowed to enter any water body. Commercial sealants may be applied to the concrete surface where difficulty in excluding flow for a long period may occur. If sealant is used, water will be excluded from the site until the sealant is cured. If groundwater comes into contact with fresh concrete, it will be prevented from flowing towards surface water. Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.
- Staging and storage areas for equipment, materials, fuels, lubricants and solvents, will be located outside of the creek channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the creek will be positioned over drip pans. Any equipment or vehicles driven and/or operated above or adjacent to the stream must be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.
- Refueling, cleaning or maintenance of mobile construction equipment and vehicles will not occur within 50 feet of any water body, or anywhere that spilled fuel could drain to a water body. Refueling of stationary equipment requiring breakdown and setup to move will remain in place. All equipment will be refueled with appropriate drip pans, absorbent pads, and water quality Best Management Practices. Equipment and vehicles operating in the project area will be checked and maintained daily to prevent leaks of fuels, lubricants, or other liquids.
- Construction access, staging, storage, and parking areas will be located within the project right of way outside of any designated ESA or outside of the right of way in areas environmentally cleared by the contractor. Access routes and the number and size of staging and work areas will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.
- Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, covering temporary access road entrances and exits with rock (rocking), and covering temporary stockpiles when weather conditions require. A speed limit of 15 miles per hour in unpaved areas of the project footprint will be enforced to reduce dust and excessive soil disturbance.

4.5.3 ANIMAL SPECIES

4.5.3.1 Affected Environment

The following special-status animal species that are not listed as threatened or endangered were determined to have some potential to occur within the project area: foothill yellow-legged frog

(*Rana boylii*), western pond turtle (*Emys* (=*Clemmys*) *marmorata*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectans*).

In addition to the white-tailed kite and burrowing owl, eight other special-status migratory bird species were identified as having some potential to nest, forage, roost, or winter within or near the project area. These species include five raptors (birds of prey): Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), long-eared owl (*Asio otus*), and merlin (*Falco columbarius*). There are also three passerine species (perching birds) — yellow warbler (*Dendroica petechia brewsteri*), loggerhead shrike (*Lanius ludovicianus*), and purple martin (*Progne subis*) — that have the potential to occur within or near the project area. These species and their habitats are described in Section 2.3.3.2 of the FEIR/EA.

4.5.3.2 Environmental Consequences

Possible impacts to the foothill yellow-legged frog, western pond turtle, San Francisco dusky-footed woodrat, burrowing owl, and migratory birds other than the white-tail kite have not changed from those reported in the FEIR/EA. Changes in impacts to the white-tailed kite are described below.

White-tailed Kite
The ornamental and native trees at Location 5 could potentially act as suitable nesting habitat for white-tailed kites and the project may result in impacts to the species at this location. White-tailed kite will not be affected at Locations 1-4, because the denser redwood and coast live oak forests in these areas do not provide appropriate breeding habitat for the species. Potential impacts at Location 5 include nest disturbance or abandonment during incubation, nestling, or fledging stages; temporary shifts in foraging patterns or territories; noise or light pollution; and winter roost abandonment (if this species were to nest near this location at the time of construction). The project will affect an estimated 850 trees, 223 of which are within the project footprint at Location 5. Although no permanent impacts to white-tailed kite are anticipated, temporary impacts can be avoided and/or minimized by implementing the minimization measures described in Section 4.5.3.3 below.

4.5.3.3 Avoidance, Minimization and/or Mitigation Measures
Some of the measures below have been revised since the FEIR/EA.

Foothill Yellow-legged Frog
The measures described in Section 4.5.4.3 to avoid and minimize impacts to the California red-legged frog will also avoid and minimize impacts to the foothill yellow-legged frog.

Western Pond Turtle
The measures to avoid or minimize impacts to California red-legged frog (Section 4.5.4.3) together with the following measures will avoid or minimize impacts to western pond turtle:

- A biologist approved by CDFW will survey the work site in the vicinity of Location 4 no more than 48 hours before the start of work activities for signs of the western pond turtle, western pond turtle nesting activity (recently excavated nests, nest plugs) or nest depredation

(partially to fully excavated nest chambers, nest plugs, scattered egg shell remains, egg shell fragments). Pre-construction surveys to detect western pond turtles will focus on potentially suitable aerial and aquatic basking habitat (logs, branches, rootwads, riprap), and the shoreline and adjacent warm, shallow waters, where pond turtles may be present below the water surface beneath algal mats or other surface vegetation. Pre-construction surveys to detect western pond turtles and their nesting activity will be concentrated within a radius to be agreed upon with CDFW of suitable aquatic habitat and will focus on areas along south- or west-facing slopes with bare, hard-packed clay or silt soils or sparse vegetation consisting of short grasses or forbs. If western pond turtles or their nesting sites are found, the biologist will contact CDFW to determine whether relocation and/or exclusion buffers are appropriate. If CDFW approves of moving the animal, a qualified biologist will be allowed sufficient time to move the western pond turtle from the work site before construction activities begin.

White-tail Kite and Other Migratory Birds

To ensure compliance with the Migratory Bird Treaty Act (16 U.S.C. 703-712) and California Fish and Game Code (§§3503, 3511, and 3513), and minimize impacts to the white-tailed kite and other migratory birds, the following species-specific avoidance and minimization measures will be implemented:

- If project activities will occur between February 15 and September 1, a qualified biologist approved by CDFW will conduct pre-construction surveys for nesting birds no more than one week before construction. Surveys will consist of multiple days of observations. If nesting birds are found, a 50-foot buffer will be established around the nest for non-raptors and a 300-foot-radius buffer will be established for raptors, such as hawks, owls, and eagles. The area will be avoided. A buffer of less than 300 feet, but no less than 100 feet, may be used if a qualified biologist, experienced in raptor behavior, is assigned to monitor the behavior of any raptor nesting within 300 feet of project activities. The qualified biologist will have authority, through the Resident Engineer, to order the cessation of all project activities within 300 feet of any raptor nest if the birds exhibit abnormal nesting behavior, which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Abnormal nesting behaviors that may cause reproductive harm include, but are not limited to: defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. Project activities within 300 feet of the nest will not resume until the qualified biologist has consulted with CDFW and both the qualified biologist and CDFW confirm that the bird's behavior has normalized or the young have left the nest.

Burrowing Owl

In addition to the measures above for migratory birds, the following precautionary measures will be taken to avoid or minimize impacts to the burrowing owl at Location 5, where ground squirrel and vole burrows provide potential nesting and foraging habitat:

1. Within 30 days before construction begins, burrowing owl preconstruction surveys will be conducted at Location 5 of the project area by a qualified biologist in accordance with CDFW's Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium's Burrowing Owl Survey Protocol and Mitigation Guidelines. Preconstruction surveys, consisting of winter season surveys (between December 1 and January 31) and nesting season surveys (between April 15 and July 15), will be conducted for Location 5 of

the project area and within a 500-foot buffer where possible, to identify and map active burrowing owl burrows. Surveys will consist of walking transects of no more than 100 feet apart.

2. Occupied burrows will not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFW verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

3. If burrowing owls are detected in the project footprint or within 500 feet of the project footprint, a non-disturbance buffer will be established within a 160-foot radius surrounding occupied burrows during the non-breeding season (September 1 through January 31) or within a 250-foot radius surrounding occupied burrows during the breeding season of February 1 through August 31.

4. If avoidance is not feasible and owls must be moved away from the disturbance area, one of the two following passive relocation techniques will be used rather than trapping. At least one full week will be necessary to accomplish this and allow the owls to acclimate to alternate burrows.

   Passive Relocation – With One-Way Doors. Owls will be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors around burrow entrances to allow the birds to leave the burrow, but not return. One-way doors (e.g., modified dryer vents) will be left in place 48 hours to ensure owls have left the burrow before excavation. Two natural or artificial burrows will be provided for each burrow in the project area that will be affected. The project area will be monitored daily for 1 week to confirm owl use of burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe will be inserted into the tunnels during excavation to maintain an escape route for any animals inside.

   Passive Relocation – Without One-Way Doors. Two natural or artificial burrows will be provided for each burrow in the affected project area. The project area will be monitored daily until the owls have relocated to the new burrows. The formerly occupied burrows may then be excavated. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe will be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.

San Francisco Dusky-Footed Woodrat

Potential presence of the San Francisco dusky-footed woodrat can be avoided by taking the following avoidance and minimization measures:

1. Prior to the start of construction, a biologist will conduct a survey of the project area and a surrounding 30-foot buffer to determine the location of existing woodrat dens. Survey data will be recorded and mapped in relation to the construction footprint.

2. A 30-foot buffer will be established around dens that can be avoided. All vegetation in the buffer area will be retained and nests will not be disturbed.

3. If active woodrat stick nests are found within the project footprint area at the time of construction, and cannot be avoided, trapping and relocation measures, developed in conjunction with CDFW and described in the Streambed Alteration Agreement, will be implemented to ensure that the project footprint is clear of woodrat nests before construction. The trapping will occur outside of the breeding period, between September and December, and will not be conducted during heavy rains or full moons. Trapping must be done by a qualified biologist with a current CDFW permit to trap.

4.5.4 THREATENED AND ENDANGERED SPECIES

Caltrans consulted with CDFW concerning the California tiger salamander, which was recently listed as threatened by CDFW. Caltrans also initiates consultation with USFWS when a project has the potential to affect a federally listed species and/or affect or adversely modify federally-designated critical habitat. Formal consultation with USFWS was first initiated in June of 2009 with the submission of a biological assessment. Biological Opinion 81420-2009-F-1058-2 was issued by the USFWS for the California red-legged frog and the California tiger salamander on July 14, 2010, and was accepted by Caltrans on October 19, 2010. As a result of changes to the project, an amended Biological Opinion, 81420-2009-F-1058-R001, was issued by USFWS on May 29, 2012. The National Marine Fisheries Service (NMFS), which regulates potential impacts to endangered anadromous fish and their critical habitat, was consulted about the project's potential affect on steelhead.

4.5.4.1 Affected Environment

Three species listed as threatened or endangered are known to occur within the project limits. These species include the California red-legged frog (*Rana draytonii*), the California tiger salamander (*Ambystoma californiense*) and the South Central California Coast steelhead (SCCC steelhead) (*Oncorhynchus mykiss*). The California red-legged frog is federally listed as threatened and is a California species of special concern. The California tiger salamander (CTS) is federally listed as threatened and has also recently been state listed as threatened by CDFW.

A description of the California red-legged frog and its habitat is described in the FEIR/EA. Because California tiger salamander recently became a state-listed species, Caltrans biologists did further analysis on habitat connectivity in the project area, which is summarized below. Steelhead information has also been added below, based on biological studies for the Supplemental Natural Environment Study (NES). The South Central California Coast (SCCC) steelhead ESU was federally listed as threatened in 1997, and the National Marine Fisheries Service (NMFS) affirmed the listing of the distinct population segment of SCCC steelhead in 2006. SCCC steelhead is also a California species of special concern.

California Tiger Salamander

A current review of the California Natural Diversity Database (CDFG 2012) showed that no new occurrences of CTS have been recorded since the 2009 NES was developed. Only Location 5 has suitable habitat for CTS. Since the 2009 NES, Caltrans has conducted further analyses using available literature, aerial imagery and a Geographic Information System (GIS) to examine CTS habitat fragmentation, connectivity and potential impediments to dispersal surrounding Location 5 with an emphasis on land between Location 5 and the nearest known CTS locations 1.3 miles to the northeast. Using these analyses with the most conservative assumptions, and further

consultation with CDFW, Caltrans has concluded the area surrounding the project site is inaccessible to CTS; therefore it is unlikely that CTS occupies Location 5 of the project area.

The ponds with recorded CTS are located within undeveloped and sparsely wooded grasslands. Grasslands surrounding these CTS ponds likely provide upland dispersal habitat given the life cycle history of CTS. Between these CTS ponds and Location 5 of the proposed project the landscape includes: (1) low-density rural residential development; (2) two relatively large ponds that appear to be perennial; (3) perennially flowing Uvas Creek; (4) a large nursery operation; (5) interspersed grassland; (6) vineyards; and (7) roads such as Watsonville Road. Based on the Federal Register and the scientific literature, the following fragment CTS habitat or are considered potential barriers to the dispersal of CTS: low-density residential development, predators, structures, intensive agriculture inactive burrows, and roads.

Low-density residential development contributes to habitat loss, fragmentation and degradation (USFWS 2005b). Structures prevent salamanders from reaching their breeding sites because their migratory corridors are disrupted (USFWS 2005b). Low-density housing areas occur adjacent to the grasslands inhabited by CTS and occur intermittently between Uvas Creek and the project location. Low-density development may contribute to higher desiccation risks associated with traversing paved areas, traffic related mortality, and predation by pets (Halupka 2012).

Based on aerial imagery dating back to 1993, the two large ponds adjacent to the residential development and grasslands appear to contain water year-round. Due to their perennial nature, these two ponds may have the capacity to support predatory fish and bullfrogs (USFWS 2005b). Thus, these two large ponds may not support CTS breeding habitat.

Uvas Creek, which flows perennially, lies southwest of the large ponds. This reach of Uvas Creek flows southeast crossing Watsonville Rd. approximately 0.99 miles north of Location 5. Approximately 2.12 river miles downstream of Watsonville Rd., Uvas Creek crosses SR 152 approximately 1.08 miles to the east of Location 5. Construction of the Uvas Dam in 1957 led to gradual yet substantial changes to the creek and the associated riparian area (Casagrande 2010). Flows within this reach now persist through the summer and fall. Dam releases between winter storms produce flows up to 160 cubic feet per second (cfs). Flow regulation has reduced the frequency and magnitude of storm-related channel scour events and has facilitated changes in riparian vegetation.

Riparian saplings of willow and alder species have proliferated where interspersed sycamores had previously persisted. Increased tree density has subsequently led to higher canopy densities, which may impede CTS dispersal (USFWS 2004). Casagrande (2010) observed that pools are the most prevalent aquatic habitat type at the Watsonville Rd. crossing yet, it also contained a greater abundance of fast water habitats (riffle, run, head of pools) relative to downstream reaches.

Drainage pipes have been observed along this reach discharging highly turbid waters and steelhead densities were reportedly lower at this reach relative to other species indicating that any potentially toxic effects of these discharges may impact different species disproportionately (Casagrande 2010). Agricultural contaminants may reduce the long-term viability of CTS and

toxicants do not need to be present in lethal concentration to be harmful (USFWS 2004). In addition, Uvas Creek contains populations of exotic predatory fish including sunfish (Lepomis spp.), carp (Cyprinus carpio), and mosquito fish (Gambusia affinis) (URS 2013). Raccoons (Procyon lotor), bullfrogs (Rana catesbeiana) and crayfish (Procambarus spp.) have also been observed in Uvas Creek (URS 2013). All of these characteristics of Uvas Creek create a potential barrier to dispersal of CTS.

Because Uvas Creek is perennially flowing it is unlikely CTS breeding habitat (USFWS 2005). Off-channel pools, formed by temporary high water filling floodplain depressions, offer potential CTS breeding habitat. However, due to the prevalence of predatory species in Uvas Creek, successful colonization of these ponds may be precluded (URS 2013). The potential for seasonal flooding in Uvas Creek poses the risk of flushing egg masses, larvae and metamorphs from off-channel pools (URS 2013).

The 2009 NES noted that the extent and frequency of potential agricultural and viticultural land management practices like harvesting, pesticide and fertilizer applications, or rodent/pest control, are unknown. Generally, viticultural practices include pruning the vines between January and March, and harvesting the grape crop between September and November, both of which are performed either by machine or by hand. Vineyards are typically planted with a cover crop of native grasses in between the vine rows, and the fields are drip irrigated throughout the growing season until as late as September. Pesticides use is typically limited to elemental sulfur, which is applied as a wetable powder, and although herbicides may be used in new fields, their application tapers off as a vineyard matures. These practices may vary between the types of grape being grown, and also depend on whether the grapes are grown organically. Where ground squirrels and gophers inhabit or become pests in vineyards, a pest control program may be in place. Pest control practices may inadvertently negatively affect CTS since inactive burrow systems become unsuitable over time and usually collapse within 18 months following cessation of burrowing mammal use (USFWS 2005b).

Other agricultural/commercial practices include a large open air nursery operation. This facility covers an area of approximately 115 acres. Approximately 0.88 miles of the facility parallels Uvas Creek. Specific activities at this site are unknown; however, substantial numbers of relatively large planter boxes are prevalent according to available aerial imagery. The number and density of structures at this facility may result in barriers to CTS dispersal. USFWS (2005b) notes that structures prevent salamanders from reaching their breeding sites because their migratory corridors are disrupted.

Roads may fragment CTS habitat and impede CTS movement along migratory corridors and lead to increased road crossing mortality during migration events (USFWS 2005b).
While an individual barrier to dispersal is to some degree porous and does not represent an absolute barrier to CTS dispersal, the number of barriers to dispersal from known CTS occurrences or breeding ponds make it unlikely that CTS can disperse into the project site.

The GIS analysis of habitat connectivity further demonstrates the probability of CTS dispersing into the project site is low given that connectivity from proximal ponds to the project site is poor. All variable inputs into the GIS analysis and model assumptions were conservative. To conduct

the GIS analysis, all potential breeding ponds were digitized from an aerial imagery layer, the adjacency and connectivity between ponds was determined, and potential barriers that can disrupt the connectivity were identified.

The analysis demonstrated that the area surrounding the project site is inaccessible to CTS, therefore it is unlikely that CTS occupy Location 5 of the project area. All ponds within 0.7 miles of the project site occur in a fragmented landscape and are isolated from each other and from the project site. The viewshed analysis also indicated that the project site falls within an inaccessible area.

Although there is a possibility that CTS could be present at Location 5, it is beyond the known maximum CTS dispersal distance from the nearest recorded CTS occurrences. The effect of the potential CTS dispersal barriers and habitat fragmentation makes the ruderal, agricultural and landscaped areas within Location 5 unlikely to be inhabited by CTS. In addition, Caltrans avoidance and minimization measures may further diminish the possibility that CTS may be disperse into the project site at Location 5 from known occurrences or breeding ponds.

Through consultation with USFWS, Caltrans determined that suitable habitat for CTS is only present at Location 5 of the project. Location 5 was deemed to have suitable habitat because of the presence of agricultural and landscaped lands with small mammal burrows that could provide suitable dispersal and aestivation habitat to the CTS. In consultation with CDFW, CDFW staff noted that CTS was unlikely to occur within the project footprint.

Steelhead

Between 1997 and 2000, 10 evolutionary significant units (ESUs) of West Coast steelhead were federally listed as either endangered or threatened by the National Marine Fisheries Service (NMFS). The South Central California Coast (SCCC) steelhead ESU was listed as threatened in 1997, and NMFS affirmed the listing of the distinct population segment of SCCC steelhead in 2006. SCCC steelhead is also a California species of special concern. The SCCC distinct population segment of steelhead includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in streams from the Pajaro River (inclusive) to, but not including the Santa Maria River, California (NMFS 2006).

Portions of Bodfish Creek and Blackhawk Canyon Creek, within and near the project area, have been designated as SCCC steelhead critical habitat. Critical habitat along Bodfish Creek stretches from Location 5 upstream through Location 4. The portion of Bodfish Creek that parallels Locations 1, 2, and 3 of the project has not been designated as critical habitat because these locations are above a hydraulic drop (small waterfall) that is just upstream of Location 4. The waterfall is a result of large boulders in the stream, and this is considered a barrier to steelhead movement. This project does not occur in or near Essential Fish Habitat as classified by the Magnuson Act.

Hecker Pass parallels and is adjacent to Bodfish Creek at Location 4, and a survey conducted on August 1, 2008, found steelhead in Bodfish Creek along the entire stretch of Location 4. Numerous juvenile SCCC steelhead were observed within Bodfish Creek in the vicinity of Location 4 of the project. Locations 1, 2, and 3 parallel Bodfish Creek upstream of this barrier, but steelhead have not been observed in the creek adjacent to these locations of the project.

Steelhead have been observed in Bodfish Creek near Location 5; however, Location 5 runs through a residential area and work will not be occurring within or near the riparian corridor of Bodfish Creek itself at Location 5.

4.5.4.2 Environmental Consequences

California Red-Legged Frog

If California red-legged frogs are present within the project footprint during construction, potential take could occur in the form of capture, harm, harassment, injury, and mortality as a result of habitat loss and degradation, construction-related disturbance, or capture and relocation. Temporary effects include disturbance and vegetation trampling due to clearing and equipment access, and permanent effects include habitat loss resulting from roadway widening and soil nail wall construction.

The project will result in approximately 7.32 acres of temporary and 5.53 acres of permanent impacts to potential California red-legged frog dispersal and upland habitat including redwood forest, coyote brush scrub, coast live oak forest, purple needle grass/native grassland, and landscaped and agricultural lands.

The project will not impact the potential for the frog to cross SR 152. The project will create only very localized widening (up to 12 feet for short distances) in Locations 1 through 5. No median concrete barrier will be installed. All existing culverts will remain in place and allow amphibian passage under the roadway. However, even with the implementation of the avoidance and minimization measures recommended in this document, there would be loss of potentially suitable upland dispersal and aestivation habitat and some small chance of direct take.

California Tiger Salamander

Caltrans biologists consulted with CDFW and USFWS concerning possible take of California tiger salamander, because the species is both state and federally listed. USFWS determined that if California tiger salamander (CTS) is found in the project footprint during construction, take may occur. However, in consultation with CDFW, CDFW staff noted that CTS was unlikely to occur within the project footprint.

In the unlikely event that CTS are present in the project footprint during construction, “take” may occur in the form of capture, harm, harassment, injury, and mortality to adult CTS. According to the federal Endangered Species Act (FESA), “take” is defined as a means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

Meanwhile, Section 2080 of the Fish and Game Code prohibits “take” of any state-listed endangered or threatened species. Pursuant to Section 86 of the Fish and Game Code, “take” is defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act (CESA) definition of take does not include habitat

loss. While similar, FESA has a lower threshold for take than CESA, because it deems harassment as a form of take, while CESA does not. In the unlikely event that a CTS is encountered on the project site at Location 5, Caltrans will not handle, capture, or relocate the individual. Instead the CTS will be allowed to leave on its own volition, and construction activities will not resume within 50 feet of the individual until the CTS vacates the project site. A biological monitor will be present on site to monitor the behavior of the CTS individual for signs of stress.

The project will result in approximately 2.07 acres of temporary and 2.25 acres of permanent impacts to potential California tiger salamander upland dispersal and aestivation and dispersal habitat in landscaped and agricultural lands as Location 5. Temporary impacts in Location 5 will result from construction activities, staging, and access. All temporary impacts at Location 5 will be revegetated after the conclusion of construction activities.

The project will neither influence nor affect the potential for the California tiger salamander to cross SR 152. The project will create only very localized widening (up to 12 feet for short distances) at Location 5. No median concrete barrier will be installed. All existing culverts will remain in place and allow amphibian passage under the roadway.

Even with the implementation of the avoidance and minimization measures recommended in this document, though, there will be loss of potential upland, aestivation, and dispersal habitat.

Steelhead

Critical habitat only runs adjacent to Location 4 of the project. Work at Location 5 will occur well outside the riparian corridor, and Locations 1, 2, and 3 are not adjacent to designated critical habitat.

Because of the variation within all steelhead life stages, steelhead may be present in Bodfish Creek any time of the year. Caltrans does not anticipate steelhead to be impacted at Locations 1, 2, and 3, because steelhead are not known to occur in this area of the project. However, steelhead may be present at Location 4. A survey conducted in 2008 for Caltrans found numerous juvenile steelhead in Bodfish Creek near Location 4. Work in the riparian corridor will be limited to the dry season (June 15 to October 15), and adult steelhead are not anticipated to be migrating during this period, though juveniles may be present.

Although individual steelhead have the potential to be impacted by the Hecker Pass project, the direct take of steelhead individuals is not anticipated because of the planned avoidance and minimization measures that will be implemented as described in the following section.

The proposed project will occur above the ordinary high water mark (OHWM) that defines the lateral extent of SCCC steelhead critical habitat. However, within the 2005 critical habitat rule for steelhead, NMFS noted that federal agencies must be aware of activities outside the OHWM, because upslope work can adversely affect instream habitat quality.

While Caltrans will not be working directly within critical habitat, project construction activities could affect critical habitat through the loss of riparian trees. Tree removal in and near the riparian corridor could adversely affect steelhead critical habitat through the loss of fallen leaves

and other organic material, an increase in sediment deposition that could smother spawning locations and eggs, and a reduction in shade that could result in increased water temperatures. Although upstream tree removal from Locations 1, 2, and 3 could have an indirect effect on downstream critical habitat, the number of riparian trees to be removed from these areas is very small compared to what is present in the surrounding forest canopy. Therefore, the reduction in leaf material input to areas downstream from these trees is likely immeasurable. Increases in runoff from new paved surface are expected to be minor, because most of the runoff flowing through the project's draining systems is from un-paved, upland areas. Downstream effects on Location 5 as a result of upstream project activities will also likely be negligible since residential properties are between the project area and Bodfish Creek. Because of Best Management Practices to control erosion and sediment, Caltrans anticipates that only negligible amounts of sediment will enter Bodfish Creek at all project locations.

Most of the work within or near the riparian corridor within critical habitat will occur at Location 4. Construction work at this location has the highest potential to affect steelhead critical habitat. Approximately 80 trees on the south side of SR 152 at this location are slated for removal. However, the area is densely forested and even without these 80 trees, there will be abundant tree cover along this stretch of Bodfish Creek. Caltrans does not anticipate there to be a measurable impact on instream water temperature or shade at this location from planned tree removal.

In summary, the number of trees to be removed from the riparian habitat along Bodfish Creek is small compared to the number of trees that will remain after the project, and erosion control measures should prevent sediment from entering the creek to the point that it would diminish migration, rearing, or spawning habitat quality. Caltrans obtained a concurrence letter from NMFS on March 13, 2013 that the proposed project "may affect, but is not likely to adversely affect," SCCC steelhead or its critical habitat.

4.5.4.3 Avoidance, Minimization and/or Mitigation Measures

California Red-Legged Frog

Because California red-legged frogs could be present throughout the project limits, temporary and permanent impacts to habitat, which does not include existing hardscape features such as the roadway or road shoulder, would be mitigated by habitat restoration/replacement.

Approximately 5.53 acres of permanent upland dispersal and aestivation habitat loss will be mitigated at a 3:1 ratio, resulting in 16.59 acres of mitigation for California red-legged frog upland dispersal and aestivation habitat. Temporary impacts of 7.32 acres will be mitigated at a 1.1:1 ratio, for a total of 8.06 acres. Caltrans may provide approximately 7.32 acres onsite and 0.732-acre offsite. Mitigation for impacts to CRLF habitat would total approximately 24.64 acres.

In addition to the above habitat restoration/replacement, the following measures to avoid and minimize impacts to the California red-legged frog (CRLF) will be implemented:

1. Seasonal Avoidance: Construction actions will be scheduled to minimize effects on listed species and habitats. Except for limited vegetation clearing (necessary to minimize effects to nesting birds), work will be conducted from April 15 through October 15, to avoid the rainy season. Work within the riparian area will be conducted from June 15 to October 15.

2. Environmental Awareness Training: Before any construction activities, a qualified biologist will conduct an education program for all construction personnel. At a minimum, the training will include a description of CRLF, CTS, and other listed species; migratory birds and their habitats; the occurrence of these species within the action area; an explanation of the status of these species and protection under FESA, CESA, and the Migratory Bird Treaty Act (MBTA); the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction crews and project personnel entering the project footprint. Upon completion of the program, personnel will sign a form stating they attended the program and understand all the avoidance and minimization measures and implications of all applicable environmental laws.

3. Pre-construction Surveys: Pre-construction surveys will be conducted by a USFWS-approved biologist immediately prior to the initiation of any ground-disturbing activities within or adjacent to suitable CRLF or CTS habitat. These surveys will comprise walking transects while conducting visual encounter surveys within areas that will be subject to staging, vegetation clearing, grubbing, grading, cut and fill, or other ground disturbing activities. All fossorial mammal burrows will be inspected for signs of CRLF or CTS usage to the maximum extent practicable. If it is determined that a burrow may be occupied by a CRLF, the burrow will be excavated by hand, if possible, and the individual(s) relocated or allowed to leave on its own volition. CRLF will be relocated in accordance with the observation and handling protocol promulgated by USFWS.

4. Environmentally Sensitive Area Fencing (ESA): Prior to the start of construction, ESAs will be clearly delineated using high-visibility orange fencing. The ESA fencing will remain in place throughout the duration of the project, while construction activities are ongoing and will prevent the encroachment of construction equipment and personnel from entering sensitive habitat areas. The final project plans will depict all locations where ESA fencing will be installed and how it will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs. In addition, hydrological features (e.g., topographic depressions, drainage ditches, culverts, etc.) outside of the project footprint will not be manipulated (e.g., re-routed, dredged, filled, graded, etc.).

5. Wildlife Exclusion Fencing: Before the start of construction, Wildlife Exclusion Fencing (WEF) will be installed along the project footprint in all areas where CRLF could potentially enter the project site. The final project plans will show where and how the WEF will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and proper WEF installation and maintenance. The WEF will remain in place throughout the duration of the project, while construction activities are ongoing, and will be regularly inspected and fully maintained. Upon project completion the WEF will be completely removed and the areas returned to their original condition or better.

6. Procedure for California Red-Legged Frog Discovery Onsite: If a California red-legged frog, or any amphibian that construction personnel believe may be this species, is encountered

during project construction, or if any contractor, employee, or agency personnel inadvertently kills or injures a California red-legged frog, the following protocol will be followed:

- All work within 50 feet of the animal will immediately cease and the resident engineer and USFWS-approved biologist will be notified. Based on the professional judgment of the biologist, if project activities can be conducted without harming or injuring the animal(s), it may be left at the location of discovery and monitored by the USFWS-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of the animal without a biological monitor present. If the biologist determines that construction cannot proceed with CRLF present in the work area, then construction will not resume until the CRLF leaves the work area or can be relocated.
- Should relocation of CRFL be necessary, the following steps will be followed:
    - Prior to handling and relocation, the USFWS-approved biologist will take precautions to prevent introduction of amphibian diseases in accordance with the revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (Service 2005a). Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle amphibians after working in other aquatic habitats.
    - CRLF will be captured by hand, dip net or other USFWS-approved methods and will be transported by hand, dip net or temporary holding container, and released as soon as practicable within the same day of capture. Handling of CRLF will be minimized to the maximum extent practicable. Holding containers and dip nets will be thoroughly cleaned and disinfected prior to transporting to the action area and rinsed with freshwater onsite immediately prior to use unless doing so would result in the injury or death of the animal(s) as a result of a time delay.
    - CRLF will be relocated to the nearest suitable habitat outside of the area where actions would not result in harm or harassment and released on the same side of SR 152 where it was discovered. The individual(s) will be released within suitable habitat in the Caltrans right of way or another property acceptable to the property owner, and USFWS will be notified. If suitable habitat cannot be identified, USFWS will be contacted to determine an acceptable alternative. Transporting CRLF to a location other than the location described herein will require written authorization of the USFWS.

7. Entrapment Avoidance: To prevent the inadvertent entrapment of California red-legged frog or other animals during construction, all excavated, steep-walled holes or trenches more than one-foot deep will be covered with plywood or similar materials at the end of each working day, or the holes or trenches will contain one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. All pipes, culverts or similar structures stored in the action area overnight will be inspected before they are moved, capped or buried. If at any time a listed species is discovered, the resident engineer and a USFWS-approved biologist will be immediately informed. The USFWS-approved biologist will determine if relocating the species is necessary and will work with USFWS and CDFW before handling or relocating unless otherwise authorized.

8. Prohibition of Erosion Control Materials Potentially Harmful to CRLF or CTS: To prevent CRLF and CTS from becoming entangled, trapped or injured, erosion control materials that use plastic or synthetic mono-filament netting will not be used within the action area. This includes products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials include fibers such as jute or twine, or tackified hydroseeding compounds.

9. Biological Monitors: A USFWS-approved biologist will be present onsite to monitor for CRLF and CTS. Through communication with the resident engineer or their designee, the biologist may stop work if deemed necessary for any reason to protect listed species and will advise the resident engineer or designee on how to proceed accordingly. The biologist will be present during all construction activities where a listed species could occur. The biologist will conduct clearance surveys at the beginning of each day within or adjacent to suitable CRLF and CTS habitat and regularly throughout the workday when construction is occurring within or adjacent to suitable CRLF and CTS habitat.

10. Minimize Nighttime Work: To the extent practicable, nighttime construction will be minimized to avoid effects to nocturnally active species.

11. Vegetation Removal: Vegetation will be cleared only where necessary and will be cut above soil level except in areas that will be excavated for roadway construction. This will allow plants to resprout after construction. A USFWS-approved biologist will be present during all vegetation clearing and grubbing activities to monitor for the presence of CRLF and CTS in the project footprint. If at any point CRLF, CTS, or other listed species are discovered during these activities, various measures discussed elsewhere in this section will be taken to avoid and minimize the harm and harassment of these species. All clearing and grubbing of woody vegetation will occur by hand or using light construction equipment, such as backhoes and excavators. All cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site. The contractor will be responsible for obtaining all permits, licenses and environmental clearances for properly disposing of such materials.

12. Construction Site Restrictions: In addition to restrictions already listed or listed under steelhead measures below, no pets will be allowed in the project area and no firearms will be allowed except for authorized law enforcement or security personnel.

California Tiger Salamander

The proposed project will permanently impact approximately 2.25 acres potential CTS habitat. Caltrans has agreed with USFWS to mitigate this impact at a 3:1 ratio, which will result in approximately 6.75 acres of mitigation for CTS habitat. The proposed project will also temporarily impact approximately 2.07 acres of potential CTS habitat that will be mitigated in-kind at a restoration ratio of 1.1:1. This will result in approximately 2.28 acres of restored upland dispersal and aestivation habitat, of which 2.07 acres will be provided onsite and 0.207-acre offsite. Therefore, mitigation for CTS will total approximately 9.02 acres of upland dispersal and aestivation habitat.

In addition to the above habitat restoration/replacement and some of measures to avoid or minimize impacts to CRLF described in Section 4.5.4.3 above, the following measures will be implemented to minimize impacts to CTS:

1. Discovery of CTS: If CTS are found, all work within 50 feet of the animal will immediately cease and the resident engineer and USFWS-approved biologist will be notified. Based on the professional judgment of the biologist, if project activities can be conducted without harming or injuring the animal(s), it may be left at the location of discovery and monitored by the USFWS-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of the animal without a biological monitor present. If the biologist determines that construction cannot proceed with CTS present in the work area, then construction will not resume until the CTS leaves the work area. Caltrans does not have state authorization to take or handle CTS. In the unlikely event CTS should enter the work site, construction will not resume until the CTS leaves the work area on its own volition.

2. Wildlife Exclusion Fencing: At Location 5, WEF will be installed during the CTS breeding season, typically from November through April, based on habitat suitability, so the likelihood of the species occupying the work site at the beginning of construction is greatly reduced. Because no CTS breeding habitat is present within Location 5, Caltrans does not anticipate CTS to be present during the breeding season when WEF at Location 5 would be installed. In cooperation with USFWS and CDFW, the location of the fencing will be determined by the resident engineer and agency-approved biologist. The final project plans will show where and how the WEF will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and proper WEF installation and maintenance. The WEF will remain in place throughout the duration of the project, while construction activities are ongoing, and will be regularly inspected and fully maintained. Upon project completion the WEF will be completely removed and the areas returned to their original condition or better.

Steelhead

The project excludes modifications to the only culvert that would be potentially passable to steelhead (at Location 4), which is the Blackhawk Canyon Creek culvert that conveys water under SR 152. The other culverts to be modified at Locations 1, 2, 3, and 4 occur at ephemeral tributaries to Bodfish Creek, and work within these areas will occur during the dry season

Other specific measures to avoid and minimize impacts to steelhead are summarized below:

1. Work within the riparian corridor will be restricted to June 15 to October 15, which is during the dry season. Restricting work to the dry season will minimize the chances work will be conducted during rain events that could result in sediment inputs to Bodfish Creek and its tributaries.

2. Before any ground disturbance occurs on the project site, the boundaries of the project area will be clearly delineated with orange plastic, high-visibility construction fencing (i.e., ESA fencing) or solid barriers to prevent workers or equipment from inadvertently straying from the project area. The contractor will do this in consultation with a Caltrans-approved biologist.

3. Silt fencing or other erosion control measures will be installed to prevent sediment and pollutant discharges to State and Federal waters.

4. Temporary erosion control measures will be implemented on all disturbed areas. Coir rolls or straw wattles will be installed along or at the base of slopes during construction to capture sediment.

5. Permanent erosion control measures will be implemented upon completion of construction. All disturbed areas will be re-vegetated with appropriate native, non-invasive species or non-persistent hybrids that will serve to stabilize site conditions.

6. A Storm Water Pollution Prevention Plan and erosion-control best management practices will be implemented to minimize water pollution during project construction.

7. All material stockpiling and staging areas will be within the project right of way in non-sensitive areas or at designated disturbed/developed areas outside of design construction zones.

8. All ground-disturbing activities will be restricted to the dry season (April 15 to October 15).

9. To avoid attracting predators of protected species, all food-related trash items such as wrappers, cans, bottles, and food scraps will be enclosed in sealed trash containers and removed at the end of each working day from the site.

10. Maintenance and refueling areas for equipment will be kept a minimum of 50 feet from from water courses.

11. Spill containment kits will be maintained onsite at all times during construction operations and/or staging or fueling of equipment.

12. No contact will be allowed between any live stream and uncured concrete.

13. Groundwater that comes in contact with wet concrete, such as within bridge footing excavations (if necessary), will not be allowed to enter any creek or wetlands, but will be isolated for proper disposal or treatment.

14. Heavy equipment will not be operated in the active flow channel of any creek.

15. Complete diversion or damming of surface flows will not be allowed.

16. Construction crews will be informed during the education program meeting that, to the extent possible, travel within the marked project site will be restricted to established roadbeds. Established roadbeds include all pre-existing and project-constructed unimproved as well as improved roads.

17. The limits of the construction area will be clearly marked. Before commencing construction activities, the contractor will define construction vehicle parking areas and all access.

18. To the maximum extent practicable, any borrow material will be certified non-toxic and weed free.

19. All construction-related materials will be removed after construction activities are completed. The temporary construction easements and staging areas will be cleaned up, re-contoured to original grade, and re-vegetated with appropriate native species, as necessary.

20. Permanent erosion control, including soil stabilization measures such as hydroseeding and coir netting, will be applied to all temporarily affected project areas to minimize erosion after construction.

21. Caltrans will not work when 0.25 inch or more of precipitation is forecasted to occur. Seventy-two hour weather forecasts from the National Weather Service will be consulted.

22. Following any precipitation event, work will not begin again until runoff ceases and there is a 30% or lesser chance of precipitation for the following 24-hour period.

23. No activity of the project will begin unless its associated erosion control measures can be completed prior to the onset of precipitation. After any storm event, the contractor will inspect all sites currently under construction and all sites scheduled to begin construction within the next 72 hours for erosion and sediment problems and take corrective action as needed.

24. All temporarily impacted waters will be graded and restored to their pre-project conditions. Permanent impacts, in the form of new or modified culverts and roadside ditches, would be constructed so as to closely resemble or improve on the pre-project conditions, wherever possible.

25. The slurry that is produced by the use of water during drilling will be fully contained and disposed of at an approved facility and will not be allowed to enter any drainage systems or waterways.

4.6 PALEONTOLOGICAL RESOURCES

4.6.1 Regulatory Setting

The following state laws pertain to paleontological resources. No local regulations pertaining to paleontological resources were identified.

<u>California Environmental Quality Act</u>
The California Environmental Quality Act (CEQA) requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or a unique geological feature (CEQA Guidelines, Appendix G (V)c). If an impact is significant, the CEQA Guidelines require “feasible measures which could minimize significant adverse impacts.”

Public Resources Code Section 5097.5

California Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Caltrans Guidelines

Caltrans uses a three-part scale for assessing the sensitivity or potential for a particular rock unit to contain paleontological resources (Caltrans, 2007). In most cases, decisions about how to manage paleontological resources must be based on this potential because the actual situation cannot be known until construction excavation for the project is underway:

High Potential. Geologic units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant non-renewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits, gravels deposits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing: (1) abundant vertebrate fossils; (2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; (3) areas that may contain datable organic remains older than recent, including *Neotoma* (sp.) middens; or (4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

Low Potential. This category includes sedimentary rock units that: 1) are potentially fossiliferous, but have not yielded significant fossils in the past; 2) have not yet yielded fossils, but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction gets underway it is possible that new and unanticipated paleontological resources might be encountered. If this occurs, a qualified Principal Paleontologist must evaluate the resource. If the resource is determined to be significant, monitoring and mitigation is required.

No Potential. Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing

significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern and no further action taken.

4.6.2 Affected Environment

Caltrans performed a paleontological reconnaissance of the project site on April 12, 2013 to observe existing geologic and paleontological conditions at the site. The reconnaissance found that the geologic map for the area is consistent with the observed geologic conditions. No fossils were observed during either the site visit or earlier geotechnical drilling.

The area of the proposed project is contained within two separate U.S. Geological Survey (USGS) 7.5' quadrangles: Watsonville East and Mt. Madonna. Geologic mapping of these quadrangle maps can be found from two separate USGS sources: Preliminary Geologic Description of the San Jose 30x60 Minute Quadrangle, California, OFR 98-795, Wentworth, et al (1997); and Geology of the Southernmost Part of Santa Clara County, California, Derived from the Digital Database, OFR 97-710, Graymer (1997). Geologic units within the project area are assigned different names on each map. For this analysis, terminology and unit descriptions from Wentworth, et al (1997) are used. The geologic units found at each location are discussed below.

Locations 1, 2, and 3: Soil nail walls proposed at these locations will expose sandstone and mudstone of Loma Chiquita Ridge. The Eocence age ascribed to this unit comes from foraminifers as well as rare molluscan fossils. Foraminifers are marine protozoans with calcareous shells full of tiny holes through which slender filaments project. Within the project area, the unit is thick to thinly bedded, locally pebbly sandstone interbedded with carbonaceous mudstone.

Location 4: Five walls are proposed at Location 4, near the entrance of the Sprig Recreational Area. The three western-most proposed walls at Location 4 will expose sandstone and mudstone of Loma Chiquita Ridge, as described above. The third wall, from west to east, will expose Mount Chual mudstone and sandstone. Wentworth, et al, describe this unit as a mottled red to olive green mudstone containing foraminifers with a bioclastic (forms from pieces of animal shells) sandy basal section. The bioclastic debris includes shallow marine macrofossils as well as large Discocyclinnid foraminifers. The eastern most wall at Location 4 will expose Lower Cretaceous basaltic volcanic rocks comprised of pillowed basalt flows and flow breccias (rock composed of angular fragments of older rocks melded together).

Location 5: No walls are proposed along this stretch of roadway; however, cuts are proposed to accommodate widening. These cuts will be made in alluvial fan deposits of Upper Pleistocene age. This unit contains tan reddish brown cobbly gravel with a clayey and sandy matrix.

4.6.3 Environmental Consequences

As stated above, five main geologic units will be excavated within the project limits. The paleontological sensitivity, per Caltrans guidelines, of each unit is described below:

Sandstone and Mudstone of Loma Chiquita Ridge (Tls): This unit has yielded micro and macrofossils in the past, however, the latter being rare. Because this unit has contained fossils in the past, it is classified as having a High Potential.

Mount Chual Mudstone and Sandstone (Tcm): This unit has produced marine macro and microfossils in the past. Due to the recovery of past fossils, this unit is classified as having High Potential.

Basaltic Volcanic Rocks of the Permanente terrane (fpv): Part of the Cretaceous Franciscan Complex, this unit is igneous in origin and described by Wentworth, *et al,* as likely an obducted ocean plateau or seamount (ocean floor rock). Due to its igneous origin, this unit is considered as having No Potential to produce fossils.

Pleistocene Alluvial Fans (Qpf): Pleistocene units are known to contain vertebrate fossils throughout the Bay Area. While cuts may be of minimal volume, this unit is considered to have a High Potential to produce significant fossils.

Construction activities can impact paleontologically-sensitive geologic units when vehicles or other work equipment impact previously-undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. This can result in impacts to fossils by destroying them or otherwise altering them in such a way that their scientific value is lost.

As noted above, only the basaltic volcanic rocks of the Permanente terrane have no potential for producing fossils. Ground disturbance of these units will include the excavation for the soil nail walls and potentially some small cut slopes. Since these activities will occur in a unit with no potential for significant paleontological resources, they are not expected to affect sensitive paleontological resources.

All other sedimentary units are classified as having a high potential for significant paleontological resources within the unit. Ground disturbance of these units will include soil nail wall excavation and cut slopes. Since these activities will occur in a unit with high potential for significant paleontological resources, they have the potential to affect sensitive paleontological resources.

4.6.4 Avoidance, Minimization, and/or Mitigation Measures

A combined Paleontological Evaluation Report (PER)/Paleontologic Mitigation Plan (PMP) will be prepared for the project before construction begins. If necessary, other mitigation measures may include:

- Monitoring construction and halting work to recover important fossils; and
- Cleaning, identification, and cataloging of fossil specimens collected for curation and research purposes.

5. CONTRIBUTORS

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6. TECHNICAL STUDIES

Supplemental Visual Impact Assessment (January 2013)

Addendum to the 2009 Historic Property Survey Report (September 2012)

Addendum to the 2009 Archaeological Survey Report (September 2012)

Supplemental Natural Environment Survey (March 2013)

7. REFERENCES

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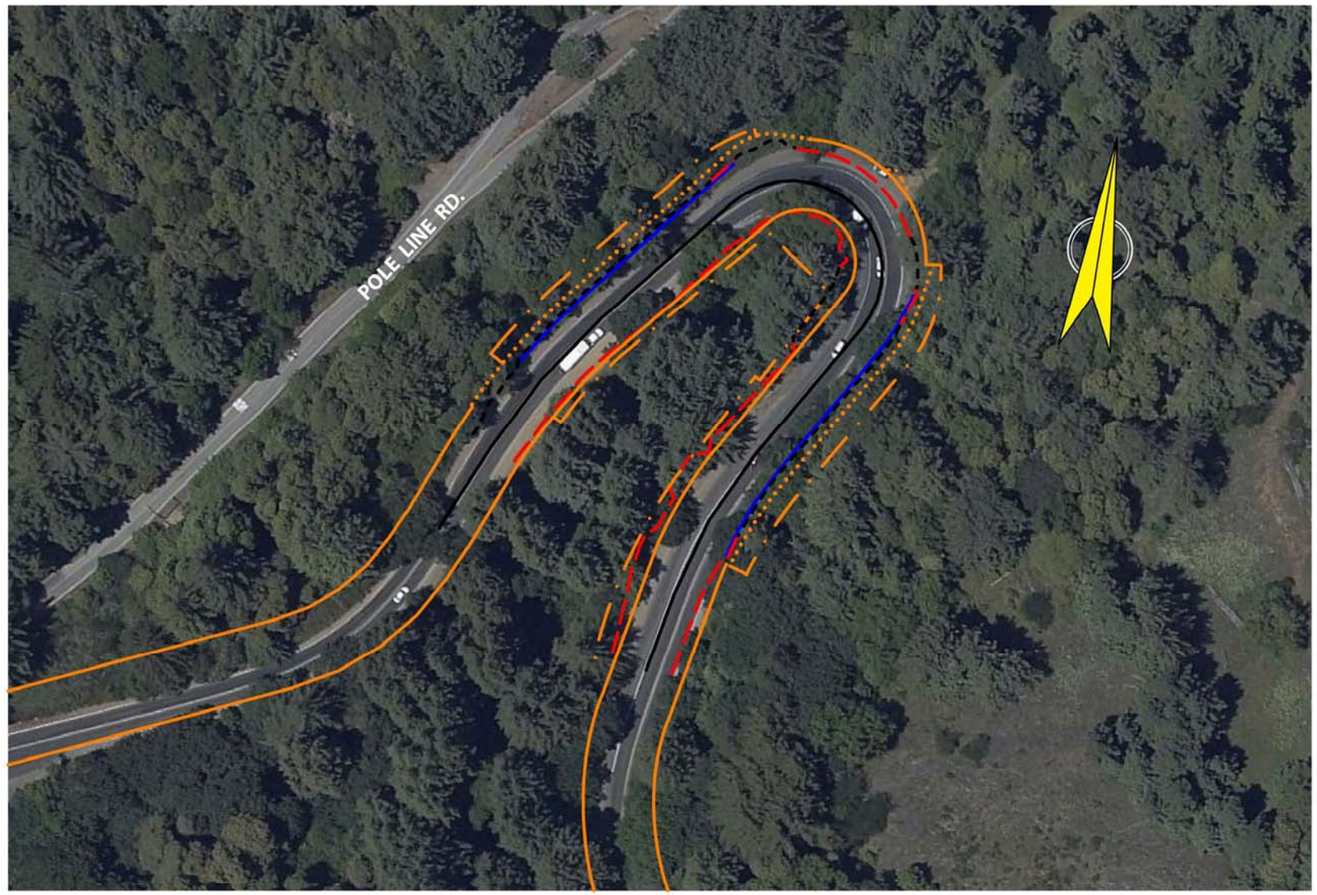
Appendix A: Location Maps



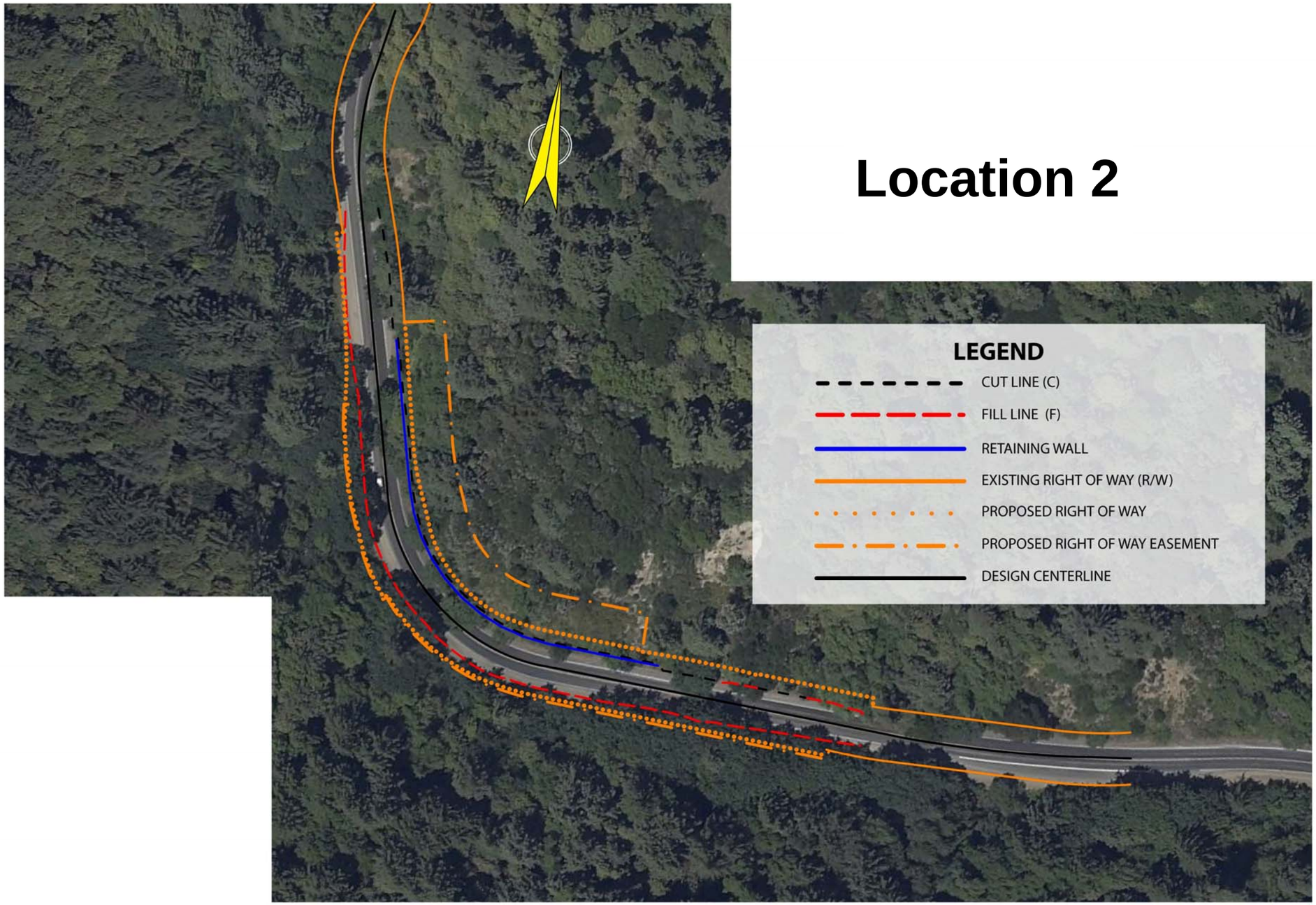
Location 1

LEGEND

- CUT LINE (C)
- FILL LINE (F)
- RETAINING WALL
- EXISTING RIGHT OF WAY (R/W)
- PROPOSED RIGHT OF WAY
- PROPOSED RIGHT OF WAY EASEMENT
- DESIGN CENTERLINE

Not to scale

Location 2



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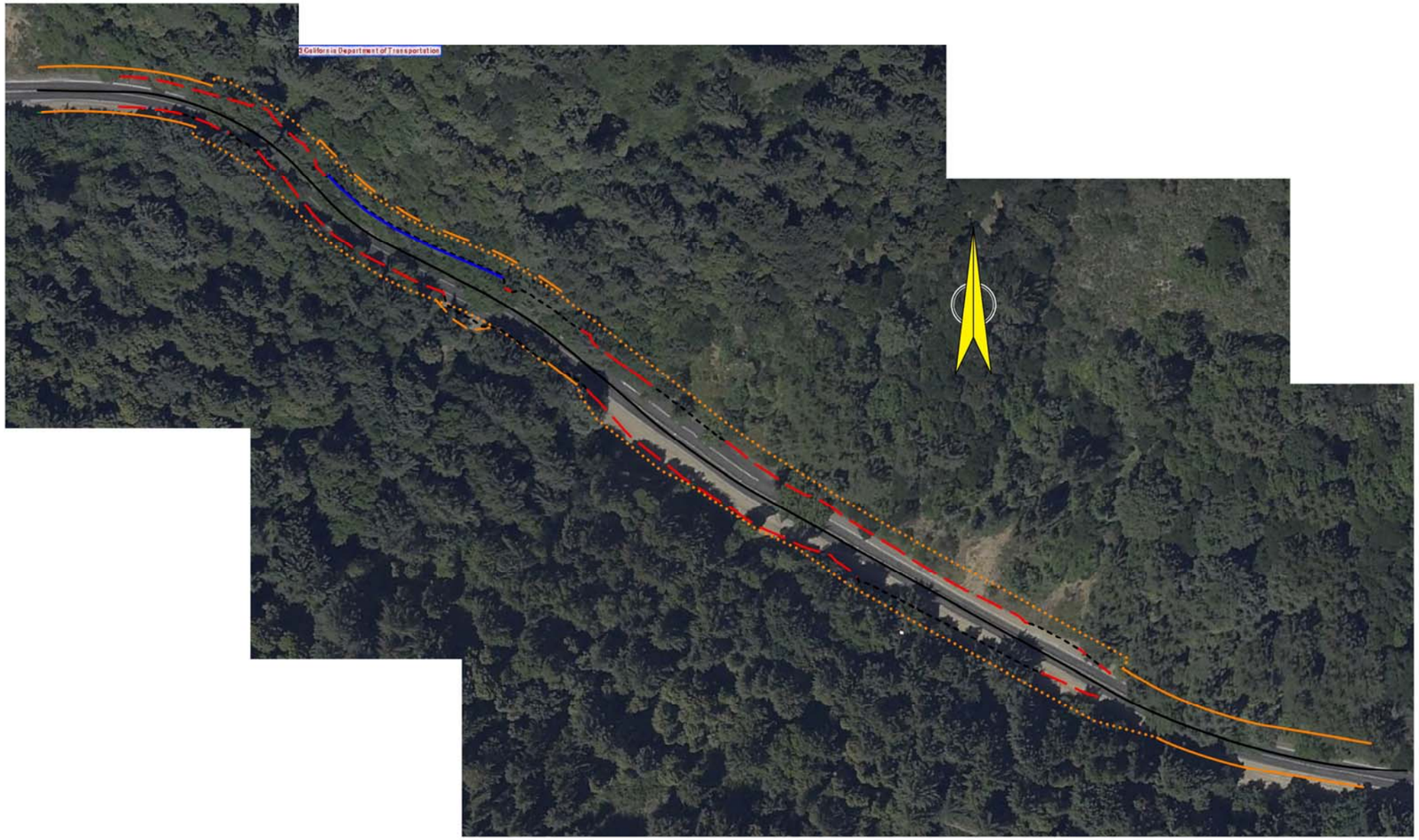
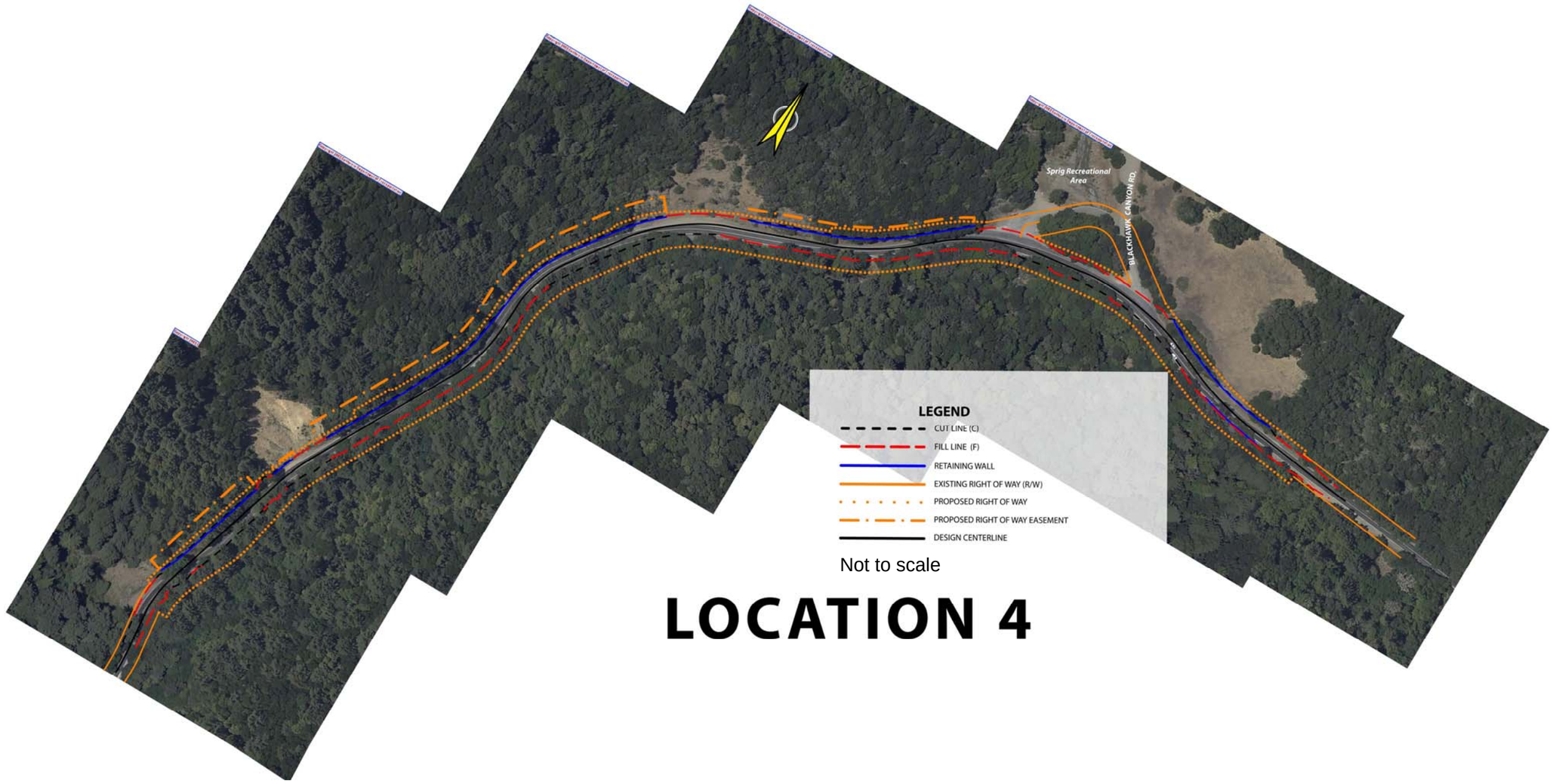


LEGEND

- CUT LINE (C)
- FILL LINE (F)
- RETAINING WALL
- EXISTING RIGHT OF WAY (R/W)
- PROPOSED RIGHT OF WAY
- PROPOSED RIGHT OF WAY EASEMENT
- PROPOSED PERMIT TO ENTER & CONSTRUCT
- DESIGN CENTERLINE

Not to scale

Location 3



Not to scale

LOCATION 4

Not to scale

Location 5

Appendix B: USFWS List of Special-Status Animal Species

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
Federal and State-Listed Species					
Plants					
Ceanothus ferrisae	coyote ceanothus	FE -- CNPS 1B.1	Chaparral, coastal scrub, and valley and foothill grassland/serpentinite; known from five occurrences in the Mt. Hamilton Range; Elevation range: 394-1,509 feet.	Absent	**Does not occur.** Suitable habitat is absent. Species not discussed further.
Chorizanthe pungens var. *pungens*	Monterey spineflower	FT -- CNPS 1B.2	Chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland/sandy; Elevation range: 10-1,476 feet.	Present	**Does not occur.** Suitable habitat is present within or in the vicinity of the BSA, but field surveys of the project limits were negative. Species not considered further.
Chorizanthe robusta var. *robusta*	robust spineflower	FE -- CNPS 1B.1	Chaparral (maritime), cismontane woodlands (openings), coastal dunes, and coastal scrub/sandy or gravelly; Elevation range: 10-984 feet.	Absent	**Does not occur.** Suitable habitat is absent. Species not discussed further.
Cordylanthus rigidus ssp. *littoralis*	seaside bird's-beak	-- SE CNPS 1B.1	Closed-cone coniferous forest, chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub/sandy, often-disturbed sites; Elevation range: 0-14,265 feet.	Absent	**Does not occur.** Suitable habitat is absent. Species not discussed further.
Dudleya setchellii	Santa Clara Valley dudleya	FE -- CNPS 1B.1	Cismontane woodland, valley and foothill grasslands/serpentinite, rocky; Elevation range: 196-1,492 feet.	Absent	**Does not occur.** Suitable habitat is absent. Species not discussed further.
Holocarpha macradenia	Santa Cruz tarplant	FT (CH) SE CNPS 1B.1	Coastal prairie, coastal scrub; Elevation range: 32-721 feet.	Absent	**Does not occur.** Suitable habitat is absent. Species not discussed further.
Streptanthus albidus ssp. *albidus*	Metcalf Canyon jewelflower	FE -- CNPS 1B.1	Valley and foothill grassland (serpentinite); Elevation range: 147-2,624 feet.	Absent	**Does not occur.** Suitable habitat is absent. Species not considered further.
Trifolium amoenum	two-fork clover	FE -- CNPS 1B.1	Coastal bluff scrub, valley, and foothill grassland (sometimes serpentinite); Elevation range: 16-1,361 feet.	Present	**Does not occur.** Suitable grassland habitat is present at Location 4, but field surveys of the project limits were negative. Species not considered further.
Invertebrates					
Euphydryas editha bayensis	bay checkerspot butterfly	FT (CH) -- --	A California endemic butterfly restricted to native grasslands on rock outcrops in serpentine soil. Host plant is the dwarf plantain (*Plantago erecta*). *Orthocarpus densiflorus* and *O. purpurascens* are secondary host plants. Restricted to San	Absent	**Does not occur.** Suitable habitat is absent. Species not considered further.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
			Francisco, Alameda, Contra Costa, San Mateo, and Santa Clara Counties.		
Fish					
Eucyclogobius newberryi	tidewater goby	FE -- --	Coastal lagoons and creeks; found up to 3 miles upstream in slow-moving water.	Absent	**Does not occur.** Outside of range. Species not considered further.
Hypomesus transpacificus	delta smelt	FT SE --	Brackish water. Found only in the Sacramento-San Joaquin Estuary, as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River. Downstream as far as San Pablo Bay.	Absent	**Does not occur.** Outside of range. Species not considered further.
Oncorhynchus mykiss	steelhead South/Central California Coast DPS	FT (CH) CSC --	Anadromous. Inhabits cold headwaters, creeks, and small to large rivers and lakes with swift, shallow water and clean, loose gravel for spawning. Requires large pools during summer months. Spawns in winter/spring. This DPS includes all naturally spawned anadromous *O. mykiss* (steelhead) populations below natural and manmade impassable barriers in streams from the Pajaro River (inclusive) to, but not including the Santa Maria River, California.	Present	**May Occur.** Locations 4 and 5 parallel Bodfish Creek and/or its tributary, Blackhawk Creek, both of which lie within the Pajaro River watershed and are within the South/Central California DPS boundary and the designated critical habitat. During field surveys, individuals were observed in several locations below State Route 152. Project excludes modifications to the only potentially passable culvert (at Location 4). Species not in Project limits; but species critical habitat is near enough to warrant consideration.
Oncorhynchus mykiss	steelhead Central California Coast DPS	FT (CH) -- --	Anadromous. Inhabits cold headwaters, creeks, and small to large rivers and lakes with swift, shallow water and clean, loose gravel for spawning. Requires large pools during summer months. Spawns in spring. This DPS includes all naturally spawned anadromous *O. mykiss* (steelhead) populations below natural and manmade impassable barriers in California streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers.	Absent	**Does not occur.** Outside of range. Species not considered further.
Oncorhynchus mykiss irideus	steelhead Central Valley DPS	FT -- --	Anadromous. Inhabits cold headwaters, creeks, and small to large rivers and lakes with swift, shallow water and clean, loose gravel for spawning. Requires large pools during summer months. The DPS includes all naturally spawned anadromous *O. mykiss* (steelhead) populations below natural and manmade impassable barriers	Absent	**Does not occur.** Outside of range. Species not considered further.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
			in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries.		
Amphibians					
Ambystoma californiense	California tiger salamander	FT (CH) ST --	A large terrestrial salamander that inhabits seasonal/semi-permanent water sources (3-4 months in duration) and adjacent upland habitat with small fossorial mammal activity in lowland grasslands, oak savannah and mixed woodlands. Range includes the Central Valley and Central Coast ranges from Colusa County south to San Luis Obispo and Kern counties from sea level to 3,460 feet in elevation with two disjunct populations within Sonoma County and Santa Barbara County. California tiger salamanders have been documented traveling distances up to 1 mile.	Present	**May occur.** Ponds exist within a 1.24-mile radius of Location 5, the potential migratory range of the species. These ponds were not assessed and it is unknown whether these ponds provide suitable breeding habitat, with the exception of two ponds at breeding occurrences reported in 2005 by the CNDDB.
Rana draytonii	California red-legged frog	FT (CH) CSC --	A medium-sized frog that inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation up to 4,900 feet in elevation. Range extends from Redding to Baja California, Mexico. Breeding occurs between November and April in standing or slow moving water at least 2 ½ feet in depth with emergent vegetation, such as cattails (*Typha* spp.), tules (*Scirpus* spp.) or overhanging willows (*Salix* spp.).	Present	**May occur.** Detected historically in 1939. Ponds and streams exist within a 1-mile radius of Locations 1 through 5, the lower limit of the potential migratory range of the species. These ponds and streams were not assessed and it is unknown whether these ponds provide suitable breeding habitat, with the exception of two locations reported in 1998 and 2004 by the CNDDB.
Birds					
Brachyramphus marmoratus marmoratus	marbled murrelet	FT (CH) SE --	A small coastal seabird that nests in coastal trees in large, mature/old-growth coniferous forests. Breeding begins in April. Tree nests require large-diameter limbs or other suitable platforms.	Absent	**Does not occur.** Suitable habitat is absent. Species not considered further.
Falco peregrinus	American peregrine falcon	FE SR --	Typically a year-round resident in California and most common along the coast. Nests on cliffs, but frequently uses manmade structures such as bridges and buildings. Nests are generally found close to water bodies with abundant avian prey. Breeding begins in March; single-brooded.	Absent	**Does not occur.** Suitable nesting habitat and large water bodies are absent. Species is uncommon, irregular breeder in Santa Clara County. Species not considered further.
Haliaeetus leucocephalus	bald eagle	Delisted SE	Winters at lakes, reservoirs, river systems and some rangelands and coastal wetlands. Nests in	Absent	**Does not occur.** Suitable nesting and foraging habitat within 5 miles. Rare to very rare vagrants

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
		--	large conifers near aquatic sources. Breeding begins in May; single-brooded.		and irregular breeders in Santa Clara County. No CNDDB occurrences nearby. Species not considered further.
Riparia riparia	bank swallow	-- ST --	Nests in colonies in vertical banks with friable soils. Breeds from April to August. Most of California's nesting colonies occur along the upper Sacramento River. Breeding begins in April; double-brooded.	Absent	**Does not occur.** Suitable vertical bank nesting habitat is absent. Species is very rare/casual in Santa Clara County. Species not considered further.
Sternula antillarum browni	California least tern	FE SE / FP --	Migratory in California; breeding colonies are found in southern California along marine and estuarine shores, and in San Francisco Bay in abandoned salt ponds and along estuarine shores; feeds in nearby shallow, estuarine waters or lagoons where small fish are abundant. After breeding, family groups regularly occur at lacustrine waters near the coast of southern California. Prefers undisturbed nest sites on open, sandy or gravelly shores near shallow-water feeding areas in estuaries.	Absent	**Does not occur.** Suitable marine/estuarine habitat is absent. Species is rare to very rare in Santa Clara County. Species not considered further.
Vireo bellii pusillus	least Bell's vireo	FE SE --	Obligate riparian species during the breeding season preferring early successional habitat, typically inhabits structurally diverse woodlands along watercourses, including cottonwood-willow forests, oak woodlands, and mule fat scrub.	Absent	**Does not occur.** Suitable riparian habitat is absent. A vagrant species in Santa Clara County. Species not considered further.
Mammals					
Vulpes macrotis mutica	San Joaquin kit fox	FE ST --	Inhabits annual grasslands or grassy open stages with scattered shrubby vegetation, agricultural fields, valley oak woodlands, and alkali sink valley floor habitats with low vegetation; needs loose-textured sandy soils for burrowing, as well as a suitable prey base, typically in areas with significant California ground squirrel activity.	Absent	**Does not occur.** Suitable habitat is absent. Species not considered further.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
Special-Status and Locally Rare Species					
Plants					
Arctostaphylos andersonii	Santa Cruz Mountains manzanita	-- -- CNPS 1B.2	Broadleafed upland forest, chaparral, and north coast coniferous forest/openings, edges, redwood forests; Elevation range: 197-2,395 feet.	Present	**Does not occur.** Suitable habitat is present only near Location 5, but no records of occurrences exist, and field surveys were negative. Species not considered further.
Arctostaphylos hookeri ssp. *hookeri*	Hooker's manzanita	-- -- CNPS 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub/sandy, sandy shale, sandstone outcrops; Elevation range: 279- 1,758 feet.	Absent	**Does not occur.** Suitable habitat is absent. Species not considered further.
Arctostaphylos pajaroensis	Pajaro manzanita	-- -- CNPS 1B.1	Chaparral (sandy); Elevation range: 98-2,495 feet	Absent	**Does not occur.** Suitable habitat is absent. Species not considered further.
Arctostaphylos regismontana	Kings mountain manzanita	-- -- CNPS 1B.2	Broadleaf upland forest, chaparral, north coast coniferous forest/granitic or sandstone; Elevation range: 1,000-2,395 feet.	Present	**Does not occur.** Elevation constraints limit suitable habitat. Past occurrences in vicinity along SR 152, but field surveys were negative. Species not considered further.
Balsamorhiza macrolepis var. *macrolepis*	big-scale balsamroot	-- -- CNPS 1B.2	Cismontane woodland, valley and foothill grassland/sometimes serpentinite; Elevation range: 295-4,593 feet.	Present	**Does not occur.** Suitable woodland habitat is present, but field surveys were negative. Species not considered further.
Castilleja rubicundula ssp. *rubicundula*	pink cream sacs	-- -- CNPS 1B.2	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland (serpentinite); Elevation range: 66-2,953 feet.	Present	**Does not occur.** Suitable woodland habitat is present, but field surveys were negative. Species not considered further.
Calyptridium parryi var. *hesseae*	Santa Cruz Mountain pussypaws	-- -- CNPS 1B.1	Chaparral, cismontane woodland; Elevation range: 1,000–3,658 feet.	Present	**Does not occur.** Suitable woodland habitat is present, but field surveys were negative. Species not considered further.
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	-- -- CNPS 1B.2	Valley and foothill grassland (alkaline); Elevation range: 3-755 feet.	Present	**Does not occur.** Suitable grassland habitat is present within or in the vicinity of Locations 4 and 5, but field surveys were negative. Species not considered further.
Clarkia concinna ssp. *automixa*	Santa Clara red ribbons	-- -- CNPS 4.3	Chaparral, cismontane woodland; Elevation range: 295-4,921 feet.	Present	**Does not occur.** Suitable woodland habitat is present, but field surveys were negative. Species not considered further.
Ericameria fasciculata	Eastwood's goldenbush	-- -- CNPS 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/sandy, openings; Elevation range: 98-902 feet.	Absent	**Does not occur.** No suitable coniferous habitat is present. Species not discussed further.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
Eriogonum nortonii	Pinnacles buckwheat	-- -- CNPS 1B.3	Chaparral, valley and foothill grassland/sandy, often on recent burns; Elevation range: 984-3,198 feet.	Present	**Does not occur.** Suitable grassland habitat is present, but field surveys were negative. Species not considered further.
Erysimum ammophilum	sand-loving wallflower	-- -- CNPS 1B.2	Chaparral (maritime), coastal dunes, coastal scrub/sandy, openings; Elevation range: 0-197 feet.	Absent	**Does not occur.** No suitable chaparral/dune habitat is present. Species not considered further.
Fritillaria liliacea	fragrant fritillary	-- -- CNPS 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley, and foothill grassland/often serpentinite; Elevation range: 10-1,345 feet.	Present	**Does not occur.** Suitable woodland/grassland habitat is present, but field surveys were negative. Species not considered further.
Hoita strobilina	Loma Prieta hoita	-- -- CNPS 1B.1	Chaparral, cismontane woodland, riparian woodland/usually serpentinite, mesic; Elevation range: 98-2,821 feet.	Present	**Does not occur.** Suitable woodland habitat, but no suitable serpentinite grassland habitat, is present, and field surveys were negative. Species not considered further.
Horkelia cuneata ssp. *sericea*	Kellogg's horkelia	-- -- CNPS 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/sandy or gravelly, openings; Elevation range: 33-656 feet.	Absent	**Does not occur.** No suitable coniferous habitat is present. Species not considered further.
Legenere limosa	legenere	-- -- CNPS 1B.1	Vernal pools; Elevation range: 3-2,887 feet.	Absent	**Does not occur**. No suitable vernal pool habitat is present. Species not considered further.
Lessingia micradenia var. *glabrata*	smooth lessingia	-- -- CNPS 1B.2	Chaparral, cismontane woodland/serpentinite, serpentinite grasslands, often roadsides; Elevation range: 394-1,378 feet.	Present	**Does not occur.** Some suitable woodland or serpentinite grassland habitat is present, but field surveys were negative. Species not considered further.
Malacothamnus arcuatus	arcuate bush-mallow	-- -- CNPS 1B.2	Chaparral, cismontane woodland; Elevation range: 49-1,165 feet.	Absent	**Does not occur.** No suitable cismontane habitat or chaparral habitat is present. Species not considered further.
Malacothamnus hallii	Hall's bush-mallow	-- -- CNPS 1B.2	Chaparral, coastal scrub, sometimes serpentinite; Elevation range: 33-2,493 feet.	Absent	**Does not occur.** No suitable chaparral/coastal scrub habitat is present. Species not considered further.
Monardella villosa ssp. *globosa*	robust monardella	-- -- CNPS 1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, coastal scrub, valley and foothill grassland; Elevation range: 328-3,001 feet.	Present	**Does not occur.** Suitable forest/woodland/grassland habitat is present, but field surveys were negative. Species not considered further.
Monolopia gracilens	Woodland wooly threads	-- -- CNPS 1B.2	Chaparral, valley and foothill grasslands (serpentine), cismontane woodland, broadleafed upland forests, north coast coniferous forests.	Absent	**Does not occur.** No suitable woodland or grassland serpentine habitat is present, and field surveys were negative. Species not considered further.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
Pedicularis dudleyi	Dudley's lousewort	-- SR CNPS 1B.2	Chaparral (maritime), cismontane woodland, north coast coniferous forest, valley, and foothill grassland, redwood forests; Elevation range: 197-2,952 feet.	Present	**Does not occur.** Suitable forest/woodland/grassland habitat is present, but field surveys were negative. Species not considered further.
Penstemon rattanii var. *kleei*	Santa Cruz Mountains beardtongue	-- -- CNPS 1B.2	Chaparral, lower montane coniferous forest, north coast coniferous forest; Elevation range: 1,312-3,608 feet.	Present	**Does not occur.** Suitable coniferous forest habitat is present and occurrences have been reported in the vicinity of Pole Line Road; however, field surveys were negative. Species not discussed further.
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcorn-flower	-- -- CNPS 1B.2	Chaparral, coastal prairie, coastal scrub/mesic; Elevation range: 49-525 feet.	Absent	**Does not occur**. No suitable chaparral/coastal scrub habitat is present. Species not considered further.
Rosa pinetorum	pine rose	-- -- CNPS 1B.2	Closed-cone coniferous forest; Elevation range: 7-984 feet.	Absent	**Does not occur.** No suitable coniferous habitat is present within the species' elevation range. Species not considered further.
Streptanthus albidus ssp. *peramoenus*	most beautiful jewel-flower	-- -- CNPS 1B.2	Chaparral, cismontane woodland, valley and foothill grassland/serpentinite, serpentinite outcrops, road cuts; Elevation range: 308-13,280 feet.	Absent	**Does not occur.** No suitable woodland serpentinite or grassland habitat is present, and field surveys were negative. Species not considered further.
Trifolium buckwestiorum	Santa Cruz clover	-- -- CNPS 1B.1	Broadleafed upland forest, cismontane woodland, coastal prairie/gravelly, margins; Elevation range: 344-2,001 feet.	Present	**Does not occur.** Suitable woodland and forest habitat is present, however field surveys were negative. Species not considered further.
Trifolium depauperatum var. *hydrophilum*	saline clover	-- -- CNPS 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools; Elevation range: 0-984 feet.	Absent	**Does not occur.** No suitable grassland habitat is present, and field surveys were negative. Species not discussed further.
Amphibians					
Rana boylii	foothill yellow-legged frog	-- CSC --	Frog restricted to partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Cobble-sized substrate required for egg-laying.	Present	**May occur.** Three foothill yellow-legged frogs were collected within or adjacent to Location 1 in 1939 along a tributary to Bodfish Creek. Suitable rocky stream habitat is present within the BSA, but no records or observations have been made since the 1939 record.
Reptiles					
Anniella pulchra nigra	black legless lizard	-- CSC --	Fossorial lizard restricted to sand dunes and sandy soils in the Monterey Bay and Morro Bay regions. Optimal habitat includes moist, sandy soils and dune areas dominated by bush lupine and mock heather.	Absent	**Does not occur.** No suitable sandy soils/dune habitat is present. Species not considered further.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
Emys (=Clemmys) marmorata	western pond turtle	-- CSC --	A moderate-sized freshwater turtle that inhabits permanent or nearly permanent bodies of water and low-gradient, slow- moving streams below 6,000-foot elevation. Range extends throughout California's streams and creeks. Frequently seen basking on logs, shorelines, or beneath algal mats at the water's surface where refugia habitat (deep waters, undercut banks, woody debris) are present.	Present	**May occur.** Two western pond turtles were observed in 2000 next to Location 4 in Sprig Lake Pond, an impoundment along Blackhawk Creek, a tributary to Bodfish Creek.
Birds					
Accipiter cooperii	Cooper's hawk	-- CSC --	Inhabits dense stands of oak woodlands, riparian deciduous forests, or other forest habitats often near water and suburban areas. Hunts in broken woodlands and along forest edges. Breeding begins in April; single-brooded.	Present	**May occur.** Species is fairly common and a regular breeder in Santa Clara County. The oak woodlands and riparian corridors present provide suitable habitat for Cooper's hawk.
Accipiter striatus	sharp-shinned hawk	-- CSC --	Inhabits north-facing slopes in conifers, including ponderosa pine, black oak, and Jeffrey pines, preferably in riparian areas. Forages primarily for small birds along woodland edges and openings, hedgerows, brushy pastures, and shorelines. Breeding begins in April; single-brooded.	Present	**May occur.** Species is fairly common to rare and a regular breeder in Santa Clara County. The conifer forest and riparian corridors present provide suitable habitat for sharp-shinned hawk.
Agelaius tricolor	tricolored blackbird	-- CSC --	Highly colonial species, most numerous in central valley and vicinity. Largely endemic to California. Nest in emergent vegetation within aquatic and riparian habitats. Breeding begins in March; double-brooded.	Absent	**Does not occur.** Species is uncommon in Santa Clara County. No suitable emergent vegetation habitat is present. Species not discussed further.
Aquila chrysaetos	golden eagle	-- CSC / FP --	A large diurnal raptor that nests on cliffs and in large trees in open areas. Forages in open terrain including grasslands, deserts, savannahs and early successional stages of forest and shrub habitats. A year-round resident in the greater Bay Area. Breeding begins in February to late May; single-brooded.	Present	**May occur**. Species is fairly common and a regular breeder in Santa Clara County. Suitable nesting habitat is limited within the BSA.
Asio otus	long-eared owl	-- CSC --	Inhabits riparian bottomlands grown to tall willows and cottonwoods and belts of live oak paralleling stream courses. Requires adjacent open land with an abundance of mice and old crow, hawk, or magpie nests as breeding sites.	Present	**May occur.** Species is very rare or casual and an irregular breeder in Santa Clara County. Marginal oak/riparian habitat near stream courses is present.
Athene cunicularia	burrowing owl	-- CSC --	Valley bottoms and foothills with low vegetation and fossorial mammal activity. Breeding begins in March; single-brooded.	Present	**May occur.** Species is uncommon and a regular breeder in Santa Clara County. Marginal open/grassland habitat is present.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
Circus cyaneus	northern harrier	-- CSC --	Inhabits both freshwater and saltwater marshes and adjacent upland grasslands. Nests on the ground in tall grasses in grasslands and meadows. Breeding begins in March; single-brooded.	Absent	**Does not occur.** Species is fairly common to uncommon and a regular breeder in Santa Clara County. No suitable freshwater/saltwater marsh habitat is present Species not discussed further.
Dendroica petechia brewsteri	yellow warbler	-- CSC --	Nests in dense, shrubby thickets dominated by willows along water courses. Nests built in a branch fork in shrubs and small trees. Breeding begins in mid-April to mid-June; sometimes double-brooded.	Present	**May occur.** Species is common to very rare/casual and a regular breeder in Santa Clara County. Suitable riparian corridor habitat is present.
Elanus leucurus	white-tailed kite	-- FP --	Inhabits grasslands, agriculture fields, oak woodlands, savannah, and riparian habitats in rural and urban areas. Feeds primarily on California voles. Year-round resident of Central and Coastal California. Breeding begins in February; sometimes double-brooded.	Present	**May occur.** Species is fairly common and a regular breeder in Santa Clara County. Marginal nesting habitat is present in the ornamental trees, agricultural fields, and rural/urban areas along Location 5.
Falco columbarius	merlin	-- CSC --	Winters throughout California, breeds in northern states, Canada, and Alaska. Wintering habitat included open forests, grasslands, agricultural fields, mud flats, and urban areas. Feeds primarily on small birds. Breeding begins in May; single-brooded.	Present	**May occur.** According to the Santa Clara County Bird Checklist, merlins are uncommon to rare in Santa Clara County. Marginal wintering habitat is present.
Falco mexicanus	prairie falcon	-- CSC --	Nests on cliffs and at times in old raven or eagle stick nests on cliff, bluff, or rock outcrop. Inhabits perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub communities. Breeding begins in April; single-brooded.	Absent	**Does not occur.** Species is uncommon to rare and an irregular breeder in Santa Clara County. No suitable cliff or rock outcrop nesting sites are present. Species not discussed further.
Lanius ludovicianus	loggerhead shrike	-- CSC --	Inhabits a variety of habitats from open grasslands and scrub to woodlands and riparian areas. Year-round resident of California. Breeding begins in February; double- to triple-brooded.	Present	**May occur.** Species is fairly common to uncommon and a regular breeder in Santa Clara County. Suitable oak woodland habitat is present.
Pandion haliaetus	osprey	-- CSC --	Inhabits rivers, lakes, and coastal habitats. Nests in tall trees near water bodies with sufficient prey. Range is almost cosmopolitan throughout California. Breeding begins in March; single-brooded.	Absent	**Does not occur.** Species is uncommon to rare in Santa Clara County. No suitable large water bodies are present. Species not discussed further.

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
Progne subis	purple martin	-- CSC --	Nests in tall, old trees near a body of water in open forests, woodlands, and riparian habitats. Forages in valley foothills, meadows, grasslands, montane hardwood, riparian habitats, closed-cone pine-cypress, ponderosa pine, Douglas fir, and redwood forests. Breeding begins in March; primarily single-brooded.	Present	**May occur.** Species is very rare/casual and a regular breeder in Santa Clara County. Suitable woodland and riparian corridor habitat is present..
Mammals					
Antrozous pallidus	pallid bat	-- CSC --	Inhabits rocky terrain in open areas in lowlands, foothills, and mountainous areas near water throughout California below 6,300 feet. Roosts in caves, rock crevices, mines, hollow trees, buildings and bridges in arid regions in low numbers (<200). Active from March-November; migrates in some areas, but may hibernate locally.	Present	**May occur.** Suitable habitat is present; however, while this species has been known to roost in coastal and coniferous forests, it does show a preference for more xeric habitats. Pallid bat has been reported east of the project limits at Uvas Creek and in downtown Gilroy.
Corynorhinus (=Plecotus) townsendii townsendii	Townsend's western big-eared bat	-- CSC --	An obligate cave rooster and moth specialist. Also inhabits caves and mines, and may also use bridges, buildings, rock crevices, and tree hollows in coastal lowlands, cultivated valleys and nearby hills characterized by mixed vegetation throughout California below 10,000 feet. Exhibits high site fidelity and is highly sensitive to disturbance. Forages along edge habitats near water; may travel long distances during foraging bouts.	Absent	**Does not occur.** Species has a strong preference for roosting in caves or mines, which are not found in the immediate area. Species may forage in coastal forests around the BSA but would not occur in the project footprint. Species not considered further.
Eumops perotis californicus	western mastiff bat	-- CSC --	Primarily a cliff-roosting species. Inhabits a variety of vegetation communities near suitable cliff roosting habitat throughout central and southern California below 10,000 feet. Often forages high above the ground and over great distances. Highly sensitive to human disturbance.	Absent	**Does not occur.** No suitable roosting habitat such as significant rock features is present. Species not discussed further.
Lasiurus blossevillii	western red bat	-- CSC --	Primarily a riparian obligate species that is ubiquitous throughout most of California except the northern Great Basin region. Roosts individually in foliage within trees along riparian areas, orchards and suburban areas. Favors cottonwoods, willows, sycamores, and walnut trees. Feeds primarily on moths, but will eat a variety of other insects.	Present	**May occur.** Suitable riparian habitat is present and sufficient roost sites are available. Species is associated with streams and riparian areas and roosts in tree foliage.
Lasiurus cinereus	hoary bat	-- CSC	Ubiquitous throughout California. A solitary foliage rooster that prefers evergreens, but will	Present	**May occur**. Suitable coniferous and deciduous tree foliage-roosting habitat is present. Species is

Scientific Name	Common Name	Federal, State, and CNPS Status[2]	Supporting Habitat / Flowering Period	Habitat Present/ Absent	Species Presence in the Project limits / Rationale
		--	use deciduous trees particularly in edge habitat. May forage in small to large groups. Feeds primarily on moths, but will eat a variety of other insects. Migrates great distances.		widespread and shows a close association with forested habitats throughout the west. Hoary bat has been reported east of the project limits in downtown Gilroy.
Neotoma fuscipes annectans	San Francisco dusky-footed woodrat	-- CSC --	Prefers forest habitats with moderate to dense understory and moderate canopy cover, often chaparral and redwood habitats. Constructs stick nests at ground-level or elevated in trees.	Present	**Does occur.** A single San Francisco dusky-footed woodrat stick nest was observed in the vicinity of Location 1 along a tributary to Bodfish Creek. Suitable redwood forest habitat is present.
Taxidea taxus	American badger	-- CSC --	Inhabits open areas with friable soils within woodlands, grasslands, savannah, and desert habitats. A fossorial mammal that preys predominately on ground squirrels and pocket gophers.	Absent	**Does not occur.** No suitable grassland habitat is present. No large mammal burrows were observed during site reconnaissance visit. Species not discussed further.

1 Database Queries were performed December 20, 2012, for the following USGS 7.5 minute quadrangles: Loma Prieta, Mount Madonna, Gilroy, Watsonville West, Watsonville East, and Chittendon.

2 **Status**

CH	Critical Habitat	FT	Federal threatened
CNPS	California Native Plant Society	SC	State candidate
CSC	California species of special concern	SE	State endangered
FC	Federal candidate	ST	State threatened
FE	Federal endangered	SR	State rare
FP	(California) fully protected species	1B.1	Rare, threatened, or endangered in California and elsewhere; seriously endangered in California
		1B.2	Rare, threatened, or endangered in California and elsewhere; fairly endangered in California

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 130422010726

Database Last Updated: September 18, 2011

Report Date: April 22, 2013

Quad Lists

Quads Containing Listed, Proposed or Candidate Species:

CHITTENDEN (386A)
WATSONVILLE EAST (386B)
MT. SIZER (406A)
MORGAN HILL (406B)
MT. MADONNA (406C)
GILROY (406D)
SANTA TERESA HILLS (407A)
LOMA PRIETA (407D)

Listed Species

Invertebrates

- Euphydryas editha bayensis
  - bay checkerspot butterfly (T)
  - Critical habitat, bay checkerspot butterfly (X)

Fish

- Eucyclogobius newberryi
  - tidewater goby (E)

- Hypomesus transpacificus
  - delta smelt (T)

- Oncorhynchus mykiss
  - Central California Coastal steelhead (T) (NMFS)
  - Central Valley steelhead (T) (NMFS)
  - Critical habitat, Central California coastal steelhead (X) (NMFS)
  - South Central California steelhead (T) (NMFS)

- Oncorhynchus tshawytscha

    - Central Valley spring-run chinook salmon (T) (NMFS)
    - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense
    - California tiger salamander, central population (T)
    - Critical habitat, CA tiger salamander, central population (X)

- Rana draytonii
    - California red-legged frog (T)
    - Critical habitat, California red-legged frog (X)

Birds

- Brachyramphus marmoratus
    - marbled murrelet (T)

- Sternula antillarum (=Sterna, =albifrons) browni
    - California least tern (E)

- Vireo bellii pusillus
    - Least Bell's vireo (E)

Mammals

- Vulpes macrotis mutica
    - San Joaquin kit fox (E)

Plants

- Castilleja affinis ssp. neglecta
    - Tiburon paintbrush (E)

- Ceanothus ferrisae
    - Coyote ceanothus (E)

- Dudleya setchellii
    - Santa Clara Valley dudleya (E)

- Holocarpha macradenia
    - Critical habitat, Santa Cruz tarplant (X)
    - Santa Cruz tarplant (T)

- Streptanthus albidus ssp. albidus
    - Metcalf Canyon jewelflower (E)
    -

Quads Containing Listed, Proposed or Candidate Species:

WATSONVILLE WEST (387A)

Database last updated: September 18, 2011

Report Date: April 22, 2013

Listed Species

Fish

- Eucyclogobius newberryi
  - critical habitat, tidewater goby (X)

- Oncorhynchus kisutch
  - coho salmon - central CA coast (E) (NMFS)

- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)
  - Critical habitat, Central California coastal steelhead (X) (NMFS)

Amphibians

- Ambystoma californiense
  - California tiger salamander, central population (T)

- Rana draytonii
  - California red-legged frog (T)
  - Critical habitat, California red-legged frog (X)

Birds

- Brachyramphus marmoratus
  - marbled murrelet (T)

- Charadrius alexandrinus nivosus
  - Critical habitat, western snowy plover (X)

- Sternula antillarum (=Sterna, =albifrons) browni
  - California least tern (E)

Mammals

- Vulpes macrotis mutica
  - San Joaquin kit fox (E)

Plants

- Chorizanthe robusta var. robusta
  - robust spineflower (E)
- Holocarpha macradenia
  - Critical habitat, Santa Cruz tarplant (X)
  - Santa Cruz tarplant (T)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Appendix C: Summary of Avoidance, Minimization and/or Mitigation Measures

This appendix summarizes all of the avoidance, minimization and/or mitigation measures for the project, including the measures discussed in Section 4 of this document and measures from Chapter 2 in the FEIR/EA that have not changed.

PARKS AND RECREATIONAL FACILITIES

- At Location 4, Caltrans will replace native trees at a ratio of 3 native trees planted for each removed tree that is 4 inches or greater in diameter at breast height. Caltrans will replace any non-native trees at a ratio of 1 native tree planted for each removed non-native tree that is 4 inches or greater in diameter at breast height.
- Caltrans will plant and re-establish native plant species in areas disturbed as a result of the project, including the forest understory and shrubs.
- Caltrans will fund, implement and monitor for a three- to five-year plant establishment period, or as determined by the California Department of Fish and Wildlife (CDFW), compensation for permanent impacts on the north side of SR 152 in the area of the Park open to the public.
- Caltrans will prepare a Mitigation, Monitoring and Reporting Plan (MMRP) that will include, at a minimum, success criteria to meet all goals and monitoring protocols specified by regulatory agencies and Caltrans relating to impacted species and habitat. Prior to preparing the MMRP, if the County agrees to a site on park land, Caltrans will consult with County Parks on an appropriate planting site and the plant palette and will provide County Parks with the final MMRP for their information prior to implementation.
- Caltrans will use best efforts to ensure that all plantings will be of native species locally collected or purchased from the local watershed and found within the immediate project site, if available, to maintain the genetic integrity of the natural communities within the Park and project area and to prevent the importation of diseases and fungi. Mixes will be approximately 65 pounds/acre mixture rate (or agreed upon by the County). In addition, the contractor will be asked to save duff from the project area to reuse on the planting site if there is no concern that the duff may carry Sudden Oak Death.
- Caltrans will use best efforts to ensure that planting sites are located within the same watershed where trees and plant species were impacted or removed.
- Caltrans will implement Best Management Practices (BMPs) to prevent the spread of Sudden Oak Death as required by applicable state and federal laws.
- Caltrans will implement BMPs to prevent the spread of invasive plant species in the Park. The BMPs will comply with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from the Federal Highway Administration, as well as the Streambed Alteration Agreement with the CDFW.
- The project work and activities will be carried out and comply with the Streambed Alteration Agreement from the CDFW, the Biological Opinion from the U.S. Fish and Wildlife Service and the Section 404 Permit from the U.S. Army Corps of Engineers. Caltrans will provide County Parks with the final permits showing the avoidance, minimization and mitigation measures agreed upon to protect habitat, threatened and endangered species, special-status animal species, wetlands and other waters of the U.S. and migratory birds within the Park.

VISUAL RESOURCES

Locations 1, 2, 3 and 4

To address the potential impacts of tree removal at these locations, the following tree replacement and revegetation measures would be implemented:

- Minimizing existing tree and vegetation removal to the greatest possible extent. The limit of work will be kept to the minimum possible footprint, not to exceed 5 feet from the edge of the retaining wall. Priority will be placed on preserving existing trees nearest the wall, in order to preserve views of the forest edge from the road to the greatest extent feasible.
- Tree replacement planting will be implemented if appropriate to mitigate for major loss of tree canopy, as determined by the project landscape architect.

To address the potential impacts of visual intrusion from the new retaining walls, the following mitigation measures would be implemented:

- Minimizing overall wall height to the greatest extent feasible.
- Using context-sensitive wall texture and color treatment, in consultation with local agencies to reduce visual contrast and enhance compatibility of visual character to the greatest extent feasible.
- Staining of the concrete safety-barrier attached to retaining walls to reduce overall color contrast and visual intrusion.
- If feasible, walls will be gutterless in order to reduce visual contrast and mass.
- Wherever feasible and consistent with safety, the use of plastic collapsible crash cushions at retaining walls will be avoided to reduce the visual contrast with the natural environment.

Location 5

- Unsightly material and equipment storage and staging will be screened to the extent feasible to minimize visibility from the roadway and nearby sensitive off-road receptors, such as homes or vineyards.

Light and Glare

- Construction activities will limit all construction lighting to within the area of work and avoid light trespass through directional lighting, shielding, and other measures as needed.

Construction impacts

- Unsightly material and equipment storage and staging will be screened to the extent feasible to minimize visibility from the roadway and nearby sensitive off-road receptors, such as homes or vineyards.
- Construction activities will be phased to minimize the duration of disturbance to the shortest feasible time.
- All vegetated areas disturbed by construction, staging, and storage will be treated with appropriate erosion control measures and revegetated.

CULTURAL RESOURCES

- Before the start of work, the Project Archaeologist will set up the Environmentally Sensitive Area (ESA) to protect the archaeological resource. No project-related activities may occur within the ESA.

- Before the start of work, the Project Architectural Historian will delineate the ESA location for the historic winery. The ESA will be located on the proposed new right-of-way line between the rows of vineyards that will be removed and those that are remaining. No project actives may occur on the other side of the ESA within the remaining vines.
- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District 4 Office of Cultural Resources Studies so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

WATER QUALITY AND STORM WATER RUNOFF

Section 401 of the Clean Water Act

- Section 401 certification will be required for this project. Early discussion will be initiated regarding the handling and disposal of water during the design phase. The groundwater will be tested for potential contamination as a part of the Hazardous Waste Site Investigation. Proper handling and disposal of the groundwater will be based on the levels of contaminants reported in the Site Investigation Report.

Section 402 of the Clean Water Act

- According to Caltrans NPDES permit and the Construction General Permit, Best Management Practices (BMPs) will be incorporated to reduce the discharge of pollutants during construction as well as permanently to the Maximum Extent Practicable (MEP). These BMPs fall into three categories, Temporary Construction Site BMPs, Permanent Design Pollution Prevention BMPs, and Permanent Treatment BMPs.

Construction Site BMPs

- Construction Site BMPs are implemented during construction activities to reduce pollutants in storm water discharges throughout construction. Temporary silt fence, concrete washout, stockpile cover, stabilized construction entrance/exit and temporary soil stabilizers are some of the temporary erosion and water pollution control measures that may be used in combination to prevent and minimize soil erosion and sediment discharges during construction. Given that the anticipated soil disturbance will be greater than 0.4 hectare (1 acre), a Storm Water Pollution Prevention Plan (SWPPP) will be developed during construction. This dynamic document addresses the deployment of various erosion and water pollution control measures that are required commensurate to changing construction activities.

Permanent Design Pollution Prevention BMPs

- Design Pollution Prevention BMPs are permanent measures to improve storm water quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces. Erosion control measures will be provided on all disturbed areas to the extent feasible. These

measures will use a combination of source and sediment control measures to prevent and minimize erosion from soil disturbed areas. Source controls can use erosion control netting in combination with hydroseeding.

- The biodegradable netting is effective in providing good initial mechanical protection while seed applied during the hydroseeding operation germinates and establishes itself. Other forms of source control such as tacked straw may also be used when applicable. Sediment controls such as biodegradable fiber rolls can be used to retain sediments and to help control runoff from disturbed slope areas. These measures will be investigated during the design phase.
- Outlet protection and velocity dissipation devices placed at the downstream end of culverts and channels are also Design Pollution Prevention BMPs that reduce runoff velocity and control erosion and scour. The need of these devices for this project will also be further investigated during the design phase.
- Generally, as velocities and volume of flow increases, so could the sediment loading. Effects to downstream flow will be further investigated during the design phase and the use of appropriate Design Pollution Prevention BMPs to address this concern will be considered.

Permanent Treatment BMPs

- This project will be required to incorporate treatment BMPs. Treatment BMPs are permanent devices and facilities treating storm water runoff. Caltrans-approved Treatment BMPs are: biofiltration swales, infiltration basins, detention basins, traction sand traps, dry weather flow diversions, media filters, gross solids removal devices (GSRDs), multi-chamber treatment trains, and wet basins.

GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

- The field exploration and investigation of this project will include borings. Laboratory tests may include corrosion, moisture content, density, plasticity index, graduation, consolidation, and triaxial tests. Vertical and horizontal borings will be advanced at all sites where fill or walls are proposed. Horizontal borings are recommended at all soil nail wall locations to determine whether the contractor will have to case the holes for the soil nails.

- The soil nail walls and retaining wall at Location 4 may require a fault study, which will likely include trenching to verify the exact location of the Sargent and Castro Faults that cross the project area limit. The strike of the fault is a design parameter for soil nail wall design. These studies will help ensure that the proposed retaining walls will be appropriately designed for the site conditions, pursuant to the requirements of latest uniform Building Code.
- Measures for the potential reactivation of the landslides and rock fall sites referred to in Table 2.2-1 in the FEIR/EA may include avoidance, different wall type, installation of rock nets and minimizing cut slopes to a maximum of 2:1.

HAZARDOUS WASTE/MATERIALS

- Additional review of the data analyzed in the ISA will be performed before ground-disturbing activities begin, to ensure that the potential hazardous materials site will not have an adverse impact on the proposed project.
- There is a potential for residual ADL in the surface soil. Testing for ADL will be performed during the final design stage. If ADL is found, special handling of the contaminated soil will be required and will include implementing a health and safety plan. If construction

encounters soil contamination, all activities involving contaminated soil or groundwater will be planned to comply with regulatory agency requirements.

- Existing yellow roadway striping that will be impacted will be tested for lead-based paint. If present, lead-based paint will be handled and disposed of to comply with regulatory agency requirements.
- Wood removed from roadside sign and metal beam guard railing is treated wood waste (TWW). Contractor must follow standard special provisions for handling, storing and disposing of TWW and provide training to personnel who handle TWW.

NATURAL COMMUNITIES

Vegetation Communities

General avoidance and minimization efforts will be incorporated into the design and implemented to reduce potential impacts to natural communities and plant and animal species. These measures will include minimizing the project footprint, providing environmental education for the construction crew, and delineating the work area and all environmentally sensitive areas with fencing. These require that an onsite biological monitor be present during activities that may impact sensitive biological resources.

Trees & Riparian Habitat

- Per the Draft Streambed Alteration Agreement from CDFW, Caltrans will compensate for permanent losses of riparian redwood forest habitat at a 3:1 ratio through a conservation easement. Caltrans anticipates there to be approximately 3.37 acres of permanent impacts to riparian habitat resulting in an easement of about 10 acres.
- Native trees outside of the riparian area with a dbh of four inches or greater will be replaced at a ratio of 3:1. All non-native trees with a dbh of four inches or greater not located in riparian habitat will be replaced at a 1:1 ratio.
- To the extent practicable, the root masses of removed trees and shrubs will be left in place. Disturbance or removal of vegetation will not exceed the minimum necessary to complete construction.
- All slopes or unpaved areas affected by the proposed project will be reseeded with native grasses and shrubs to stabilize the slopes and bare ground against erosion. Following construction, native plant species will be installed at the disturbed area(s).

WETLANDS AND OTHER WATERS

- Caltrans will limit construction activities to the smallest area possible to complete the work in an effort to minimize impacts to the existing riverine habitat in Bodfish Creek. A Caltrans-approved biologist will clearly delineate this limited construction area for incorporation in the project plans and specifications. The perimeter of the work site will be adequately fenced using high visibility Environmentally Sensitive Area (ESA) fencing to prevent damage to adjacent riparian habitat. No construction activities, within the riparian zone, will be allowed within the habitat protected by ESA fencing.

- Caltrans will use erosion control measures throughout all phases of operation where sediment runoff from exposed slopes threatens to enter waterways. At no time will silt-laden runoff be allowed to enter the stream or directed to where it may enter the stream. Erosion control installations will be monitored for effectiveness and repaired or replaced as recommended by

a Water Quality Monitor. As needed to prevent erosion Caltrans will use soil stabilizers such as hydroseeding, netting, erosion control mats, mulch, fiber rolls, silt fences, check dams and devices to slow the velocity of runoff. Materials containing monofilament or plastic will not be used. The contractor will stabilize and equip construction site entrances and exits with tire washing capability. No discharge of pollutants from vehicle and equipment cleaning is allowed in any storm drains or water courses.

- Concrete will be excluded from surface water for a period of 30 days after it is poured/ sprayed. During that time the concrete will be kept moist, and runoff from the concrete will not be allowed to enter any water body. Commercial sealants may be applied to the concrete surface where difficulty in excluding flow for a long period may occur. If sealant is used, water will be excluded from the site until the sealant is cured. If groundwater comes into contact with fresh concrete, it will be prevented from flowing towards surface water. Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.
- Staging and storage areas for equipment, materials, fuels, lubricants and solvents, will be located outside of the creek channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the creek will be positioned over drip pans. Any equipment or vehicles driven and/or operated above or adjacent to the stream must be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.
- Refueling, cleaning or maintenance of mobile construction equipment and vehicles will not occur within 50 feet of any water body, or anywhere that spilled fuel could drain to a water body. Refueling of stationary equipment requiring breakdown and setup to move will remain in place. All equipment will be refueled with appropriate drip pans, absorbent pads, and water quality Best Management Practices. Equipment and vehicles operating in the project area will be checked and maintained daily to prevent leaks of fuels, lubricants, or other liquids.
- Construction access, staging, storage, and parking areas will be located within the project right of way outside of any designated ESA or outside of the right of way in areas environmentally cleared by the contractor. Access routes and the number and size of staging and work areas will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.
- Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, covering temporary access road entrances and exits with rock (rocking), and covering temporary stockpiles when weather conditions require. A speed limit of 15 miles per hour in unpaved areas of the project footprint will be enforced to reduce dust and excessive soil disturbance.

ANIMAL SPECIES

Western Pond Turtle

The measures to avoid or minimize impacts to California red-legged frog (Section 4.4.4.3) together with the following measures will avoid or minimize impacts to western pond turtle:

- A biologist approved by CDFW will survey the work site in the vicinity of Location 4 no more than 48 hours before the start of work activities for signs of the western pond turtle, western pond turtle nesting activity (recently excavated nests, nest plugs) or nest depredation (partially to fully excavated nest chambers, nest plugs, scattered egg shell remains, egg shell fragments). Pre-construction surveys to detect western pond turtles will focus on potentially suitable aerial and aquatic basking habitat (logs, branches, rootwads, riprap), and the shoreline and adjacent warm, shallow waters, where pond turtles may be present below the water surface beneath algal mats or other surface vegetation. Pre-construction surveys to detect western pond turtles and their nesting activity will be concentrated within a radius to be agreed upon with CDFW of suitable aquatic habitat and will focus on areas along south- or west-facing slopes with bare, hard-packed clay or silt soils or sparse vegetation consisting of short grasses or forbs. If western pond turtles or their nesting sites are found, the biologist will contact CDFW to determine whether relocation and/or exclusion buffers are appropriate. If CDFW approves of moving the animal, a qualified biologist will be allowed sufficient time to move the western pond turtle from the work site before construction activities begin.

White-tail Kite and Other Migratory Birds

To ensure compliance with the Migratory Bird Treaty Act (16 U.S.C. 703-712) and California Fish and Game Code (§§3503, 3511, and 3513), and minimize impacts to the white-tailed kite and other migratory birds, the following species-specific avoidance and minimization measures will be implemented:

- If project activities will occur between February 15 and September 1, a qualified biologist approved by CDFW will conduct pre-construction surveys for nesting birds no more than one week before construction. Surveys will consist of multiple days of observations. If nesting birds are found, a 50-foot buffer will be established around the nest for non-raptors and a 300-foot-radius buffer will be established for raptors, such as hawks, owls, and eagles. The area will be avoided. A buffer of less than 300 feet, but no less than 100 feet, may be used if a qualified biologist, experienced in raptor behavior, is assigned to monitor the behavior of any raptor nesting within 300 feet of project activities. The qualified biologist will have authority, through the Resident Engineer, to order the cessation of all project activities within 300 feet of any raptor nest if the birds exhibit abnormal nesting behavior, which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Abnormal nesting behaviors that may cause reproductive harm include, but are not limited to: defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. Project activities within 300 feet of the nest will not resume until the qualified biologist has consulted with CDFW and both the qualified biologist and CDFW confirm that the bird's behavior has normalized or the young have left the nest.

Burrowing Owl

In addition to the measures above for migratory birds, the following precautionary measures will be taken to avoid or minimize impacts to the burrowing owl:

1. Within 30 days before construction begins, burrowing owl pre-construction surveys will be conducted at Location 5 of the project area by a qualified biologist in accordance with CDFW's Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium's Burrowing Owl Survey Protocol and Mitigation Guidelines. Preconstruction

surveys, consisting of winter season surveys (between December 1 and January 31) and nesting season surveys (between April 15 and July 15), will be conducted for Location 5 of the project area and within a 500-foot buffer where possible, to identify and map active burrowing owl burrows. Surveys will consist of walking transects of no more than 100 feet apart.

2. Occupied burrows will not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFW verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
3. If burrowing owls are detected in the project footprint or within 500 feet of the project footprint, a non-disturbance buffer will be established within a 160-foot radius surrounding occupied burrows during the non-breeding season (September 1 through January 31) or within a 250-foot radius surrounding occupied burrows during the breeding season of February 1 through August 31.

4. If avoidance is not feasible and owls must be moved away from the disturbance area, one of the two following passive relocation techniques will be used rather than trapping. At least one full week will be necessary to accomplish this and allow the owls to acclimate to alternate burrows.

   Passive Relocation – With One-Way Doors. Owls will be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors around burrow entrances to allow the birds to leave the burrow, but not return. One-way doors (e.g., modified dryer vents) will be left in place 48 hours to ensure owls have left the burrow before excavation. Two natural or artificial burrows will be provided for each burrow in the project area that will be affected. The project area will be monitored daily for one week to confirm owl use of burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe will be inserted into the tunnels during excavation to maintain an escape route for any animals inside.

   Passive Relocation – Without One-Way Doors. Two natural or artificial burrows will be provided for each burrow in the affected project area. The project area will be monitored daily until the owls have relocated to the new burrows. The formerly occupied burrows may then be excavated. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe will be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.

San Francisco Dusky-Footed Woodrat

Potential presence of the San Francisco dusky-footed woodrat can be avoided by taking the following avoidance and minimization measures:

1. Prior to the start of construction, a biologist will conduct a survey of the project area and a surrounding 30-foot buffer to determine the location of existing woodrat dens. Survey data will be recorded and mapped in relation to the construction footprint.
2. A 30-foot buffer will be established around dens that can be avoided. All vegetation in the buffer area will be retained and nests will not be disturbed.

3. If active woodrat stick nests are found within the project footprint area at the time of construction, and cannot be avoided, trapping and relocation measures, developed in conjunction with CDFW and described in the Streambed Alteration Agreement, will be implemented to ensure that the project footprint is clear of woodrat nests before construction. The trapping will occur outside of the breeding period, between September and December, and will not be conducted during heavy rains or full moons. Trapping must be done by a qualified biologist with a current CDFW permit to trap.

THREATENED AND ENDANGERED SPECIES

California Red-Legged Frog

Approximately 5.53 acres of permanent upland dispersal and aestivation habitat loss will be mitigated at a 3:1 ratio, resulting in 16.59 acres of mitigation for California red-legged frog upland dispersal and aestivation habitat. Temporary impacts of 7.32 acres will be mitigated at a 1.1:1 ratio, for a total of 8.06 acres. Caltrans may provide approximately 7.32 acres onsite and 0.732-acre offsite. Mitigation for impacts to CRLF habitat would total approximately 24.64 acres.

In addition to the above habitat restoration/replacement, the following measures to avoid and minimize impacts to the California red-legged frog (CRLF) will be implemented:

1. Seasonal Avoidance: Construction actions will be scheduled to minimize effects on listed species and habitats. Except for limited vegetation clearing (necessary to minimize effects to nesting birds), work will be conducted from April 15 through October 15, to avoid the rainy season.

2. Environmental Awareness Training: Before any construction activities, a qualified biologist will conduct an education program for all construction personnel. At a minimum, the training will include a description of CRLF, CTS, and other listed species; migratory birds and their habitats; the occurrence of these species within the action area; an explanation of the status of these species and protection under FESA, CESA, and the Migratory Bird Treaty Act (MBTA); the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction crews and project personnel entering the project footprint. Upon completion of the program, personnel will sign a form stating they attended the program and understand all the avoidance and minimization measures and implications of all applicable environmental laws.

3. Pre-construction Surveys: Pre-construction surveys will be conducted by a USFWS-approved biologist immediately prior to the initiation of any ground disturbing activities within or adjacent to suitable CRLF or CTS habitat. These surveys will comprise walking transects while conducting visual encounter surveys within areas that will be subject to staging, vegetation clearing, grubbing, grading, cut and fill, or other ground disturbing activities. All fossorial mammal burrows will be inspected for signs of CRLF or CTS usage to the maximum extent practicable. If it is determined that a burrow may be occupied by a CRLF, the burrow will be excavated by hand, if possible, and the individual(s) relocated or allowed to leave on its own volition. CRLF will be relocated in accordance with the observation and handling protocol promulgated by USFWS.

4. Environmentally Sensitive Area Fencing (ESA): Prior to the start of construction, ESAs -- defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed – will be clearly delineated using high-visibility orange fencing. Construction work areas include the active construction site and all areas providing support for the project including areas used for vehicle parking, equipment and material storage and staging, access roads, etc. The ESA fencing will remain in place throughout the duration of the project, while construction activities are ongoing and will prevent the encroachment of construction equipment and personnel from entering sensitive habitat areas. The final project plans will depict all locations where ESA fencing will be installed and how it will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs. In addition, hydrological features (e.g., topographic depressions, drainage ditches, culverts, etc.) outside of the project footprint will not be manipulated (e.g., re-routed, dredged, filled, graded, etc.).

5. Wildlife Exclusion Fencing: Before the start of construction, Wildlife Exclusion Fencing (WEF) will be installed along the project footprint in all areas where CRLF could potentially enter the project site. The final project plans will show where and how the WEF will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and proper WEF installation and maintenance. The WEF will remain in place throughout the duration of the project, while construction activities are ongoing, and will be regularly inspected and fully maintained. Upon project completion the WEF will be completely removed and the areas returned to their original condition or better.

6. Procedure for California Red-Legged Frog Discovery Onsite: If a California red-legged frog, or any amphibian that construction personnel believe may be this species, is encountered during project construction, or if any contractor, employee, or agency personnel inadvertently kills or injures a California red-legged frog, the following protocol will be followed:

   - All work within 50 feet of the animal will immediately cease and the resident engineer and USFWS-approved biologist will be notified. Based on the professional judgment of the biologist, if project activities can be conducted without harming or injuring the animal(s), it may be left at the location of discovery and monitored by the USFWS-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of the animal without a biological monitor present. If the biologist determines that construction cannot proceed with CRLF present in the work area, then construction will not resume until the CRLF leaves the work area or can be relocated.
   - Should relocation of CRFL be necessary, the following steps will be followed:
     - Prior to handling and relocation, the USFWS-approved biologist will take precautions to prevent introduction of amphibian diseases in accordance with the revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (Service 2005a). Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle amphibians after working in other aquatic habitats.

- CRLF will be captured by hand, dip net or other USFWS-approved methods and will be transported by hand, dip net or temporary holding container, and released as soon as practicable within the same day of capture. Handling of CRLF will be minimized to the maximum extent practicable. Holding containers and dip nets will be thoroughly cleaned and disinfected prior to transporting to the action area and rinsed with freshwater onsite immediately prior to use unless doing so would result in the injury or death of the animal(s) as a result of a time delay.
- CRLF will be relocated to the nearest suitable habitat outside of the area where actions would not result in harm or harassment and released on the same side of SR 152 where it was discovered. The individual(s) will be released within suitable habitat in the Caltrans right of way or another property acceptable to the property owner, and USFWS will be notified. If suitable habitat cannot be identified, USFWS will be contacted to determine an acceptable alternative. Transporting CRLF to a location other than the location described herein will require written authorization of the USFWS.

7. Entrapment Avoidance: To prevent the inadvertent entrapment of California red-legged frog or other animals during construction, all excavated, steep-walled holes or trenches more than one-foot deep will be covered with plywood or similar materials at the end of each working day, or the holes or trenches will contain one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. All pipes, culverts or similar structures stored in the action area overnight will be inspected before they are moved, capped or buried. If at any time a listed species is discovered, the resident engineer and a USFWS-approved biologist will be immediately informed. The USFWS-approved biologist will determine if relocating the species is necessary and will work with USFWS and CDFW before handling or relocating unless otherwise authorized.

8. Prohibition of Erosion Control Materials Potentially Harmful to CRLF or CTS: To prevent CRLF and CTS from becoming entangled, trapped or injured, erosion control materials that use plastic or synthetic mono-filament netting will not be used within the action area. This includes products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials include fibers such as jute or twine, or tackified hydroseeding compounds.

9. Biological Monitors: A USFWS-approved biologist will be present onsite to monitor for CRLF and CTS. Through communication with the resident engineer or their designee, the biologist may stop work if deemed necessary for any reason to protect listed species and will advise the resident engineer or designee on how to proceed accordingly. The biologist will be present during all construction activities where a listed species could occur. The biologist will conduct clearance surveys at the beginning of each day within or adjacent to suitable CRLF and CTS habitat and regularly throughout the workday when construction is occurring within or adjacent to suitable CRLF and CTS habitat.

10. Minimize Nighttime Work: To the extent practicable, nighttime construction will be minimized to avoid effects to nocturnally active species.

11. Vegetation Removal: Vegetation will be cleared only where necessary and will be cut above soil level except in areas that will be excavated for roadway construction. This will allow plants to resprout after construction. A USFWS-approved biologist will be present during all vegetation clearing and grubbing activities to monitor for the presence of CRLF and CTS in the project footprint. If at any point CRLF, CTS, or other listed species are discovered during these activities, various measures discussed elsewhere in this section will be taken to avoid and minimize the harm and harassment of these species. All clearing and grubbing of woody vegetation will occur by hand or using light construction equipment, such as backhoes and excavators. All cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site. The contractor will be responsible for obtaining all permits, licenses and environmental clearances for properly disposing of such materials.

12. Construction Site Restrictions: In addition to restrictions already listed or listed under steelhead measures below, no pets will be allowed in the project area and no firearms will be allowed except for authorized law enforcement or security personnel.

California Tiger Salamander

The proposed project will permanently impact approximately 2.25 acres potential CTS habitat. Caltrans has agreed with USFWS to mitigate this impact at a 3:1 ratio, which will result in approximately 6.75 acres of mitigation for CTS habitat. The proposed project will also temporarily impact approximately 2.07 acres of potential CTS habitat that will be mitigated in-kind at a restoration ratio of 1.1:1. This will result in approximately 2.28 acres of restored upland dispersal and aestivation habitat, of which 2.07 acres will be provided onsite and 0.207-acre offsite. Therefore, mitigation for CTS will total approximately 9.02 acres of upland dispersal and aestivation habitat.

In addition to the above habitat restoration/replacement and some of measures to avoid or minimize impacts to CRLF described in Section 4.5.4.3 above, the following measures will be implemented to minimize impacts to CTS:

1. Discovery of CTS: If CTS are found, all work within 50 feet of the animal will immediately cease and the resident engineer and USFWS-approved biologist will be notified. Based on the professional judgment of the biologist, if project activities can be conducted without harming or injuring the animal(s), it may be left at the location of discovery and monitored by the USFWS-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of the animal without a biological monitor present. If the biologist determines that construction cannot proceed with CTS present in the work area, then construction will not resume until the CTS leaves the work area. Caltrans does not have state authorization to take or handle CTS. In the unlikely event CTS should enter the work site, construction will not resume until the CTS leaves the work area on its own volition.

2. Wildlife Exclusion Fencing: At Location 5, WEF will be installed during the CTS breeding season, typically from November through April, based on habitat suitability, so the likelihood of the species occupying the work site at the beginning of construction is greatly reduced. Because no CTS breeding habitat is present within Location 5, Caltrans does not anticipate CTS to be present during the breeding season when WEF at Location 5 would be installed. In

cooperation with USFWS and CDFW, the location of the fencing will be determined by the resident engineer and agency-approved biologist. The final project plans will show where and how the WEF will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and proper WEF installation and maintenance. The WEF will remain in place throughout the duration of the project, while construction activities are ongoing, and will be regularly inspected and fully maintained. Upon project completion the WEF will be completely removed and the areas returned to their original condition or better.

Steelhead

1. Work within the riparian corridor will be restricted to June 15 to October 15, which is during the dry season. Restricting work to the dry season will minimize the chances work will be conducted during rain events that could result in sediment inputs to Bodfish Creek and its tributaries.

2. Before any ground disturbance occurs on the project site, the boundaries of the project area will be clearly delineated with orange plastic, high-visibility construction fencing (i.e., ESA fencing) or solid barriers to prevent workers or equipment from inadvertently straying from the project area. The contractor will do this in consultation with a Caltrans-approved biologist.

3. Silt fencing or other erosion control measures will be installed to prevent sediment and pollutant discharges to State and Federal waters.

4. Temporary erosion control measures will be implemented on all disturbed areas. Coir rolls or straw wattles will be installed along or at the base of slopes during construction to capture sediment.

5. Permanent erosion control measures will be implemented upon completion of construction. All disturbed areas will be re-vegetated with appropriate native, non-invasive species or non-persistent hybrids that will serve to stabilize site conditions.

6. A Storm Water Pollution Prevention Plan and erosion-control best management practices will be implemented to minimize water pollution during project construction.

7. All material stockpiling and staging areas will be within the project right of way in non-sensitive areas or at designated disturbed/developed areas outside of design construction zones.
8. All ground-disturbing activities will be restricted to the dry season (April 15 to October 15).

9. To avoid attracting predators of protected species, all food-related trash items such as wrappers, cans, bottles, and food scraps will be enclosed in sealed trash containers and removed at the end of each working day from the site.

10. Maintenance and refueling areas for equipment will be kept a minimum of 50 feet from water courses.

11. Spill containment kits will be maintained onsite at all times during construction operations and/or staging or fueling of equipment.

12. No contact will be allowed between any live stream and uncured concrete.

13. Groundwater that comes in contact with wet concrete, such as within bridge footing excavations (if necessary), will not be allowed to enter any creek or wetlands, but will be isolated for proper disposal or treatment.

14. Heavy equipment will not be operated in the active flow channel of any creek.

15. Complete diversion or damming of surface flows will not be allowed.

16. Construction crews will be informed during the education program meeting that, to the extent possible, travel within the marked project site will be restricted to established roadbeds. Established roadbeds include all pre-existing and project-constructed unimproved as well as improved roads.

17. The limits of the construction area will be clearly marked. Before commencing construction activities, the contractor will define construction vehicle parking areas and all access.

18. To the maximum extent practicable, any borrow material will be certified non-toxic and weed free.

19. All construction-related materials will be removed after construction activities are completed. The temporary construction easements and staging areas will be cleaned up, re-contoured to original grade, and re-vegetated with appropriate native species, as necessary.

20. Permanent erosion control, including soil stabilization measures such as hydroseeding and coir netting, will be applied to all temporarily affected project areas to minimize erosion after construction.

21. Caltrans will not work when 0.25 inch or more of precipitation is forecasted to occur. Seventy-two hour weather forecasts from the National Weather Service will be consulted.

22. Following any precipitation event, work will not begin again until runoff ceases and there is a 30% or lesser chance of precipitation for the following 24-hour period.

23. No activity of the project will begin unless its associated erosion control measures can be completed prior to the onset of precipitation. After any storm event, the contractor will inspect all sites currently under construction and all sites scheduled to begin construction within the next 72 hours for erosion and sediment problems and take corrective action as needed.

24. All temporarily impacted waters will be graded and restored to their pre-project conditions. Permanent impacts, in the form of new or modified culverts and roadside ditches, would be

constructed so as to closely resemble or improve on the pre-project conditions, wherever possible.

25. The slurry that is produced by the use of water during drilling will be fully contained and disposed of at an approved facility and will not be allowed to enter any drainage systems or waterways.

INVASIVE SPECIES

- In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.
- In the event that high or medium priority noxious weeds, as defined by the California Department of Food and Agriculture or the California Invasive Plant Council, are disturbed or removed during construction related activities, the contractor will contain the plant material associated with these noxious weeds and dispose of it in a matter that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible, the area should be covered to the extent practicable with heavy black plastic solarization material until the end of the project.
- Caltrans will implement Best Management Practices (BMPs) to prevent the spread of Sudden Oak Death (SOD) as required by applicable state and federal laws. Before removing trees or vegetation from the job site within a SOD infected county, obtain a wood transportation permit from the County Agricultural Commissioner, and submit a copy to the resident engineer. Provide a copy of the permit to all employees, subcontractors, and other private or public parties who remove trees, wood or vegetation from the project site.
- Clean equipment used to clear, grub, or chip removed vegetation as follows:

  A. Clean hand equipment with a solution of 9 parts water to 1 part bleach and rinse; or clean with soap and water, rinse, spray with disinfectant and wipe dry; or steam clean with a soap solution and rinse with clear water.
  B. Power wash trucks and large equipment to remove mud or soil accumulation.
  C. Clean workers boots of mud prior to leaving the work area.

PALEONTOLOGICAL RESOURCES

A combined Paleontological Evaluation Report (PER)/Paleontologic Mitigation Plan will be prepared (PMP) for the project before construction begins. If necessary, other mitigation measures may include:

- Monitoring construction and halting work to recover important fossils; and
- Cleaning, identification, and cataloging of fossil specimens collected for curation and research purposes.